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EPA's Clean Power Plan for Existing Power Plants: Frequently Asked Questions

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Summary

On October 10, 2017, the U.S. Environmental Protection Agency (EPA) proposed to repeal the Clean Power Plan (CPP), the Obama Administration rule that would limit carbon dioxide (CO_2) emissions from existing fossil-fuel-fired power plants. The action came in response to Executive Order 13783, in which President Trump directed federal agencies to review existing regulations and policies that potentially burden the development or use of domestically produced energy resources. Among the E.O.'s specific directives was that EPA review the CPP, which was one of the Obama Administration's most important actions directed at reducing greenhouse gas (GHG) emissions.

The Clean Power Plan was promulgated in August 2015 to reduce GHG emissions from the generation of electric power. Fossil-fueled electric power plants are the largest individual U.S. sources of GHG emissions, accounting for about 29% of the U.S. total from all sources. The rule set individual state targets for average emissions from existing power plants—interim targets for the period 2022-2029 and final targets to be met by 2030. The targets for each state were derived from a formula based on three "building blocks"—efficiency improvements at individual coal-fired power plants and increased use of renewable power and natural gas combined-cycle power plants to replace more polluting coal-fired units. Although EPA set state-specific targets, states would determine how to reach these goals, not EPA.

EPA has said it would expect the rule's targets to reduce total power plant CO_2 emissions by about 32% when fully implemented in 2030 as compared with 2005 levels. A variety of factors—some economic, some the effect of government policies at all levels—have already reduced power sector CO_2 emissions more than ¾ of this amount as of 2016.

Although EPA is proposing to repeal the CPP, it did not propose repeal of the GHG "endangerment finding," the 2009 agency finding that emissions of CO_2 and other GHGs endanger public health and welfare. Without addressing the finding, EPA appears to have a continuing obligation to limit emissions of CO_2 from power plants. Thus, in addition to the proposed repeal of the CPP, EPA has issued an Advance Notice of Proposed Rulemaking (ANPRM) to solicit information on systems of emission reduction that it might require in a future rule to replace the CPP.

Besides EPA's proposal to repeal the rule, the rule is the subject of ongoing litigation in which a number of states and other entities have challenged it (while other states and entities have intervened in support of it). On February 9, 2016, the Supreme Court stayed implementation of the rule for the duration of the litigation. The U.S. Court of Appeals for the District of Columbia heard oral arguments in the case in September 2016, but agreed to an EPA request to continue to hold the case in abeyance while the agency proceeds to repeal the CPP.

This report provides background information, discusses the statutory authority under which EPA promulgated the rule, and describes the rule's current status as of November 2017. The Clean Power Plan relies on authority asserted by EPA in Section 111(d) of the Clean Air Act (CAA). This section has been infrequently used and seldom interpreted by the courts, so a number of questions have arisen regarding the extent of EPA's authority and the mechanisms of implementation.

The report also summarizes the provisions of the Clean Power Plan rule as it was finalized on August 3, 2015, including

- how large an emission reduction would be achieved under the rule nationwide,
- how EPA allocated emission reduction requirements among the states,

- the potential role of cap-and-trade systems and other flexibilities in implementation,
- what role the actions of individual power plants (i.e., "inside the fence" actions) and actions by other actors, including energy consumers (i.e., "outside the fence" actions) might play in compliance strategies, and
- what role there would be for existing programs at the state and regional level, such as the nine-state Regional Greenhouse Gas Initiative (RGGI), and for broader GHG reduction programs such as those implemented in California.

The report also discusses options that Congress has to influence EPA's action.

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On October 10, 2017, the U.S. Environmental Protection Agency (EPA) proposed to repeal the Clean Power Plan (CPP), an Obama Administration rule that would limit carbon dioxide (CO_2) emissions from existing fossil-fuel-fired power plants.[1] The action came in response to Executive Order 13783, in which President Trump directed federal agencies to review existing regulations and policies that potentially burden the development or use of domestically produced energy resources. Among the E.O.'s specific directives was that EPA review the CPP, which was one of the Obama Administration's most important actions directed at reducing greenhouse gas (GHG) emissions.

EPA promulgated the CPP on August 3, 2015.[2] The rule set standards for CO_2 emissions from existing fossil-fuel-fired power plants under Section 111(d) of the Clean Air Act (CAA).[3] Information regarding the rule, including EPA's Regulatory Impact Analysis and numerous EPA Fact Sheets, can be found at https://web.archive.org/web/20161104002205/http://www2.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants.

Interest in the rule has been intense, reflecting what is generally recognized to be the importance of its potential effects. The economy and the health, safety, and well-being of the nation depend on a reliable and affordable power supply, which many contend would be adversely affected by controls on GHG emissions from power plants. At the same time, an overwhelming scientific consensus has formed that there are risks, potentially catastrophic, of greenhouse gas-induced climate change. To determine how the CPP addresses these issues, congressional committees asked EPA officials numerous questions about the rule, and individual Members wrote EPA seeking additional information about the rule's potential impacts.[4] Following the rule's proposal, EPA received more than 4.3 million public comments, the most ever for an EPA rule.[5] EPA responded to questions and comments by making numerous changes to the rule between proposal and promulgation. Congressional and public interest has continued since the final rule was promulgated.

Besides EPA's proposal to repeal the rule, the rule is the subject of ongoing litigation: a number of states and other entities have challenged it, while other states and entities have intervened in support of it. On February 9, 2016, the Supreme Court granted applications to stay the rule for the duration of the litigation. The U.S. Court of Appeals for the District of Columbia heard oral arguments in the case in September 2016, but agreed to an EPA request to continue to hold the case in abeyance while the agency proceeds with the repeal process.

In order to provide basic information about the rule as promulgated, and about the ongoing litigation and proposed repeal of the rule, this report presents a series of questions and answers.

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[1] Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 *Federal Register* 48,035 (October 16, 2017).

[2] U.S. EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, October 23, 2015.

[3] 42 U.S.C. §7411(d).

[4] See, for example, the letter from a bipartisan group of 47 Senators to EPA Administrator Gina McCarthy, May 22, 2014, at http://www.fischer.senate.gov/public/_cache/files/79d2321e-175c-4456-b4c7-f9b600e15288/5.22.14-senate-ghg-dear-colleague-letter.pdf.

[5] More than 34,000 public submissions on the proposal can be viewed at http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OAR-2013-0602. An interactive map allowing users to search for comments by state officials can be found at http://bipartisanpolicy.org/energy-map/.

Background

Q: Why did EPA promulgate the Clean Power Plan?

A: EPA promulgated emissions guidelines to limit carbon dioxide (CO_2) emissions from existing power plants under Section 111(d) of the CAA for a variety of reasons. Some important context includes the following:

- The Supreme Court in *Massachusetts v. EPA* in 2007 determined that "air pollutant," as used in the CAA, covers GHGs.[6] EPA thereafter determined that GHGs are air pollutants that were "reasonably anticipated to endanger both public health and welfare."[7]
- In December 2010, EPA entered into a settlement agreement to issue New Source Performance Standards (NSPSs) for GHG emissions from electric generating units (EGUs) under Section 111(b) of the CAA and emission guidelines under Section 111(d) covering existing EGUs.[8] As discussed further below,[9] EPA finalized NSPSs for GHG emissions from new, modified, and reconstructed fossil-fuel-fired EGUs at the same time as the CPP.[10]
- In the context of U.S. commitments under a 1992 international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), President Obama pledged in 2009 to reduce U.S. GHG emissions by 17% below 2005 levels by 2020, consistent with an 80% reduction by 2050.[11] The President set a further goal as the U.S. national contribution to global GHG reductions under the 2015 Paris Agreement: a 26% to 28% reduction from 2005 levels to be achieved by 2025, consistent with a straight-line path to an 80% reduction by 2050.[12] Other countries have also pledged GHG emissions abatement.[13] Parties to the

[6] Massachusetts v. EPA, 549 U.S. 497 (2007), actually involved GHG emissions from motor vehicles, not power plants. In 2011, however, the Court explicitly ruled that "air pollutant" includes GHGs when applied to power plants under Section 111. American Elec. Power Co., Inc. v. Connecticut, 564 U.S. 410, 424-29 (2011). For further discussion of these decisions, see CRS Report R43699, *Key Historical Court Decisions Shaping EPA's Program Under the Clean Air Act*, by Linda Tsang and Alexandra M. Wyatt.

[7] See EPA, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act," Final Rule, 74 *Federal Register* 66496, December 15, 2009. EPA's "endangerment finding" was upheld by the Supreme Court in *Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014).

[8] See Settlement Agreement Between State of New York, and U.S. EPA, December 23, 2010, at http://www2.epa.gov/sites/production/files/2013-09/documents/boilerghgsettlement.pdf; CRS Report R44807, *U.S. Climate Change Regulation and Litigation: Selected Legal Issues*, by Linda Tsang, p. 12.

[9] See below, "Q: How do the Clean Power Plan standards for existing power plants relate to EPA's GHG standards for new fossil-fueled power plants?"

[10] EPA, "Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64509, October 23, 2015. As noted in preamble to this rule, EPA first proposed a New Source Performance Standard for GHG emissions from new fossil fuel-fired EGUs in April 2012; it withdrew that proposal and issued a new proposal in January 2014.

[11] See CRS Report R40001, *A U.S.-Centric Chronology of the United Nations Framework Convention on Climate Change*, by Jane A. Leggett; and CRS Report R43120, *President Obama's Climate Action Plan*, coordinated by Jane A. Leggett.

[12] See CRS Report R44609, *Climate Change: Frequently Asked Questions About the 2015 Paris Agreement*, by Jane A. Leggett and Richard K. Lattanzio, Climate Change: Frequently Asked Questions about the 2015 Paris Agreement, by Jane A. Leggett and Richard K. Lattanzio.

[13] See CRS In Focus IF10239, *President Obama Pledges Greenhouse Gas Reduction Targets as Contribution to 2015*

> Paris Agreement (currently 143) are legally bound to submit GHG emission reduction pledges, although they are not bound to the quantitative targets themselves. As of April 27, 2017, 165 intended nationally determined contributions—covering more than 190 countries, including all major emitters—had been submitted. The PA entered into force on November 4, 2016, and the United States is a Party, following President Obama's communication of U.S. acceptance of the agreement in September 2016. The U.S. Nationally Determined Contribution (NDC) is registered in the interim Registry of NDCs.[14]

Fossil-fueled EGUs account for 29% of U.S. GHG emissions.[15] It would be challenging to substantially abate U.S. GHG emissions without addressing these sources.

Q: How much progress has the United States made in reducing GHG emissions and meeting emission targets?

A: **Figure 1** illustrates net U.S. GHG emissions between 1990 and 2015.[16] As the figure indicates, U.S. GHG emissions increased during most of the years between 1990 and 2007. GHG emissions decreased substantially in 2008 and 2009 as a result of a variety of factors—some economic, some the effect of government policies at all levels. Since 2010, emissions have fluctuated but have not surpassed 2009 levels.

The figure also compares recent U.S. GHG emission levels to the 2020 and 2025 emission goals. Based on 2015 GHG emission levels, the United States is more than halfway to reaching President Obama's 2020 goal (17% below 2005 levels). U.S. GHG levels in 2015 were 11% below 2005 levels.

Global Climate Change Deal, by Jane A. Leggett.

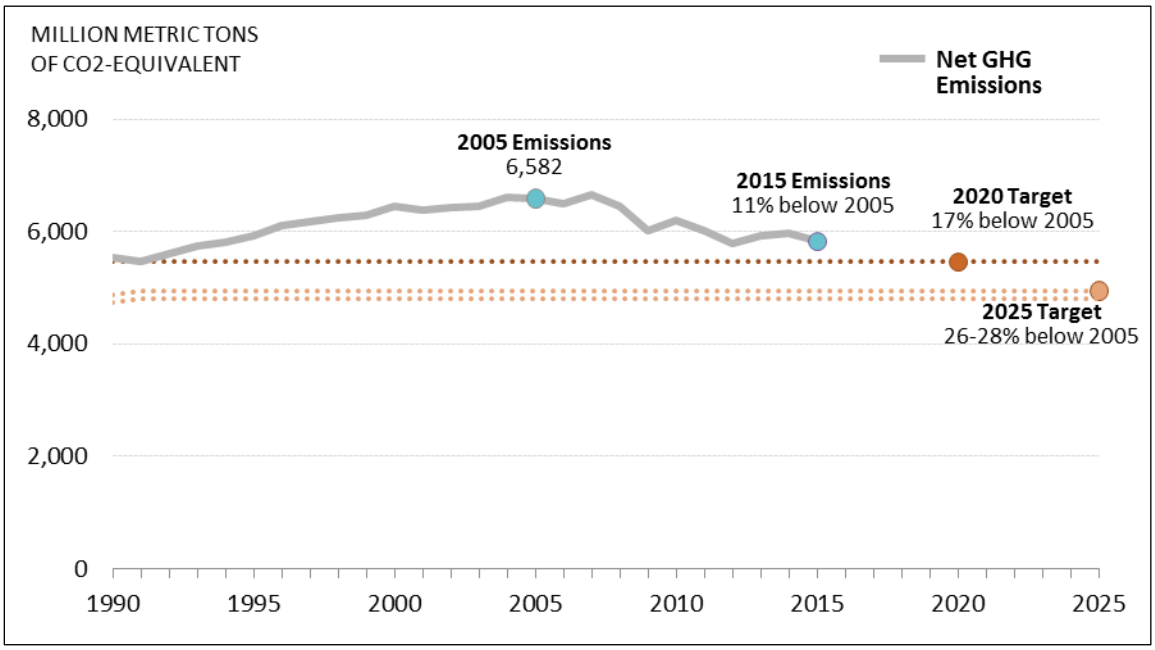
[14] On June 1, 2017, however, President Trump announced his intention to withdraw the United States from the Paris Agreement. For additional information on the CPP and the Paris Agreement, see "The CPP and the International Paris Agreement" below.

[15] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015*, April 2017, p. 2-24, at https://www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf.

[16] Net GHG emissions include net carbon sequestration from land use, land use change, and forestry. This involves carbon removals from the atmosphere by photosynthesis and storage in vegetation.

Figure 1. U.S. GHG Emissions (Net)

Compared to 2020 and 2025 Emission Targets

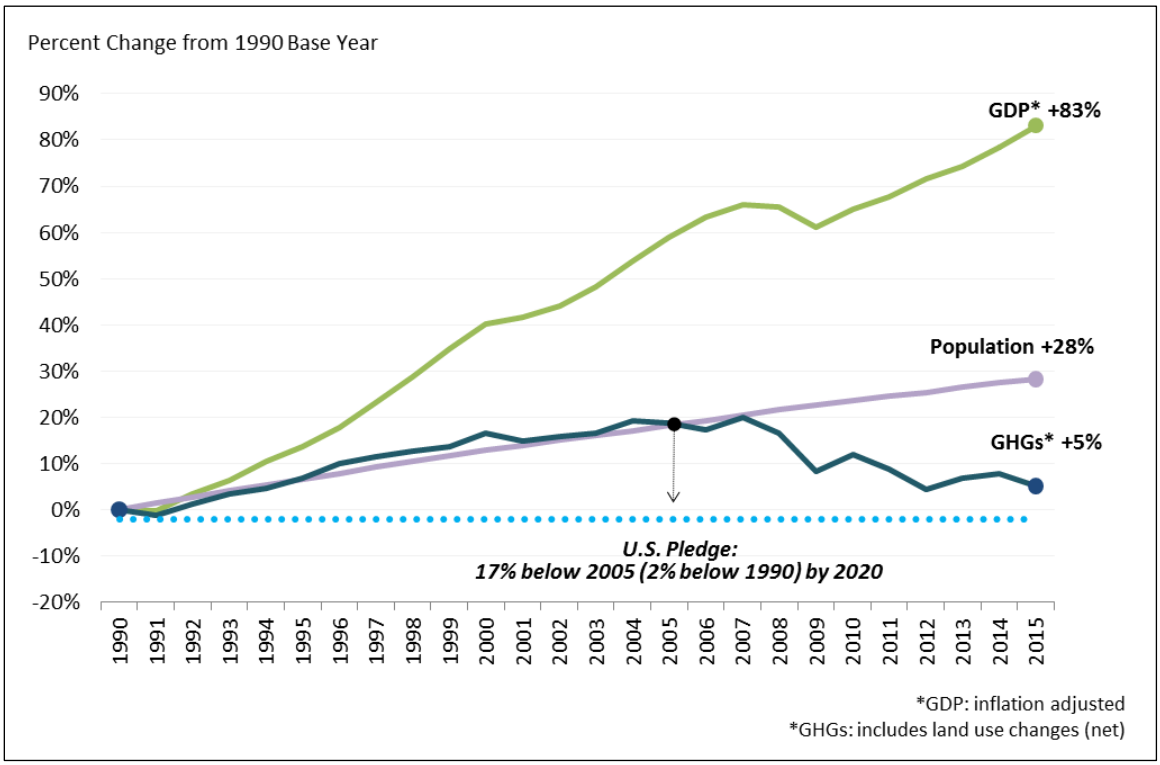


Source: Prepared by CRS; data from EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015*, April 2017, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks.

Notes: Net GHG emissions includes net carbon sequestration from land use, land use change, and forestry. This involves carbon removals from the atmosphere by photosynthesis and storage in vegetation. The two lines for the 2025 target represent the target range of 26% to 28% below 2005 levels.

Figure 2 illustrates the percentage change in net U.S. GHG emissions, U.S. economic activity measured as gross domestic product (GDP, adjusted for inflation), and U.S. population between 1990 and 2015. As **Figure 2** indicates, during that period, U.S. economic activity increased by 83%, population increased 28%, and GHG emissions increased by 5%.

Figure 2. Percentage Change in U.S. GHG Emissions, the Economy, and Population
1990-2015



Source: CRS figure using GHG emissions data from Environmental Protection Agency, *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2015*, April 2017; GDP data from U.S. Bureau of Economic Analysis, National Economic Accounts; population data from U.S. Census Bureau; accessed May 12, 2017.

Notes: GDP, or "gross domestic product," is one measure of national economic activity. The six GHGs for which emissions are estimated are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Net GHG emissions includes net carbon sequestration from land use, land use change, and forestry. This involves carbon removals from the atmosphere by photosynthesis and storage in vegetation.

Q: How much does the generation of electricity contribute to total U.S. GHG emissions?

A: The U.S. electricity generation sector[17] contributed about 29% of all U.S. GHG emissions in 2015.[18] CO_2 emissions account for the vast majority (99% in 2015) of GHG emissions from the electricity sector. As illustrated in **Figure 3**, CO_2 emissions from electricity generation generally increased between 1990 and 2007, but have generally decreased since that time.[19]

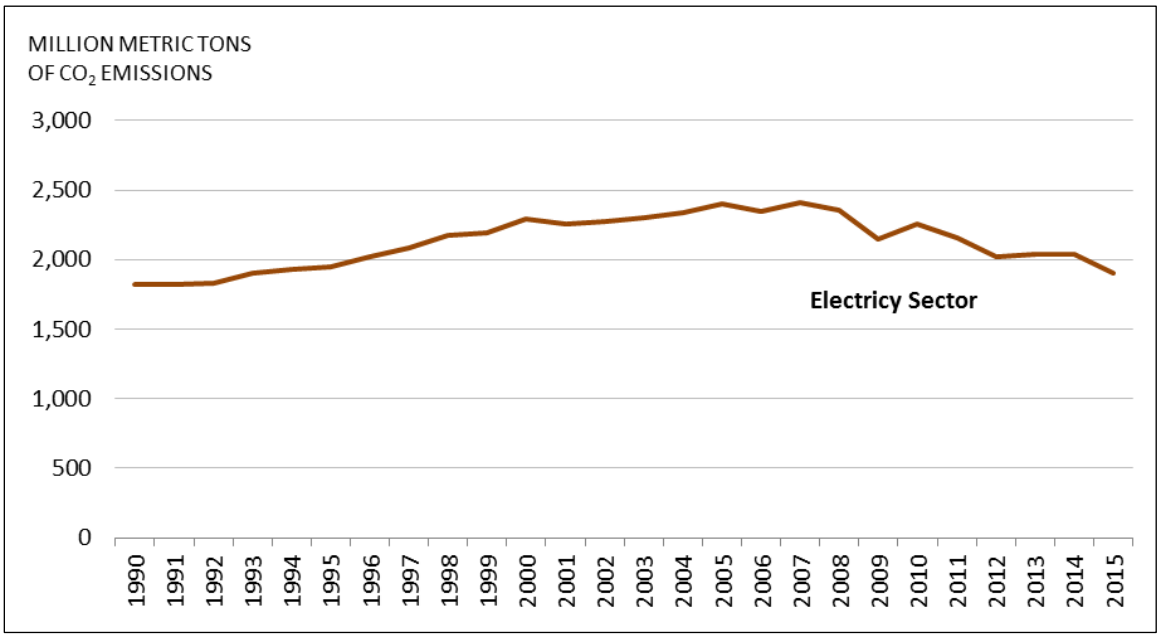
[17] Other sectors include transportation, industrial, commercial, and residential.

[18] EPA, *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2015*, April 2017.

[19] For a further discussion, see CRS Report R44451, *U.S. Carbon Dioxide Emissions Trends and Projections: Role of the Clean Power Plan and Other Factors*, by Jonathan L. Ramseur.

Figure 3. CO_2 Emissions from the Electricity Sector

1990-2015



Source: Prepared by CRS, data from EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015*, April 2017.

Q: What other steps has EPA taken to reduce GHG emissions?

A: Prior to the promulgation of this rule, EPA had already promulgated GHG emission standards for light-duty and medium- and heavy-duty vehicles, using its authority under Section 202 of the CAA.[20] Light-duty vehicles (cars, SUVs, vans, and pickup trucks) and medium- and heavy-duty vehicles (including buses, heavy trucks of all kinds, and on-road work vehicles) are collectively the largest emitters of GHGs other than power plants. Together, on-road motor vehicles accounted for 23% of U.S. GHG emissions in 2015.[21]

GHG standards for light-duty vehicles first took effect for Model Year (MY) 2012. Allowable GHG emissions will be gradually reduced each year from MY2012 through MY2025. In MY2025, emissions from new vehicles must average about 50% less per mile than in MY2010. The standards for heavier-duty vehicles began to take effect in MY2014. They will require emission reductions of 6% to 23%, depending on the type of engine and vehicle, when fully implemented in MY2018. A second round of standards, to address later medium- and heavy-duty vehicles, was promulgated on August 16, 2016.[22] The new standards cover model years 2018-2027 for certain trailers, and model years 2021-2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.[23] The standards are expected to lower CO_2

[20] See CRS Report R40506, *Cars, Trucks, Aircraft, and EPA Climate Regulations*, by James E. McCarthy and Richard K. Lattanzio, and CRS Report R42721, *Automobile and Truck Fuel Economy (CAFE) and Greenhouse Gas Standards*, by Brent D. Yacobucci, Bill Canis, and Richard K. Lattanzio.

[21] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015*, April 2017, pp. 3-24 and ES-7.

[22] EPA, "Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2 ," 81 *Federal Register* 73478, October 25, 2016.

[23] On October 27, 2017, the D.C. Circuit Court of Appeals granted the Truck Trailer Manufacturers Association's

emissions by approximately 1.1 billion metric tons over the life of the covered vehicles, according to EPA.

EPA determined that the promulgation of standards for motor vehicles also triggered Clean Air Act requirements that new major stationary sources of emissions (power plants, refineries, etc.) obtain permits for their GHG emissions, and install the Best Available Control Technology, as determined by state and EPA permit authorities on a case-by-case basis, prior to construction. The Supreme Court partially upheld that position in June 2014, provided that the sources were already required to obtain permits for other conventional pollutants.[24]

The GHG permitting requirements for stationary sources have been in place since 2011 but were limited by EPA's "Tailoring Rule" to the very largest emitters—about 200 facilities as of mid-2014. The Supreme Court's June 2014 decision invalidated the Tailoring Rule, but found that EPA could limit GHG permit requirements to "major" facilities, so-classified as a result of their emissions of conventional pollutants. In so doing, the Court limited the pool of potential GHG permittees to a number similar to what the Tailoring Rule would have provided.

In 2016, EPA also promulgated GHG (methane) emission standards for new oil and gas sources[25] and for new and existing municipal solid waste (MSW) landfills.[26] Although these rules have been promulgated, they are being challenged in the U.S. Court of Appeals for the D.C. Circuit.[27] President Trump's Executive Order 13783 requires EPA to review the methane emission standards for oil and gas sources.[28] In addition, EPA announced that it will reconsider fugitive emissions monitoring and other requirements that are part of the oil and gas methane standards[29] and has proposed to stay the compliance date for those requirements for two years.[30]

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request to stay the requirements for trailers pending the judicial review of the medium- and heavy-duty vehicles rule. Order, Truck Trailer Manufacturers Ass'n v. EPA, No. 16-1430 (October 27, 2017). The court previously granted EPA's request to pause the judicial review during agency's reconsideration of the rule. Order, Truck Trailer Manufacturers Ass'n v. EPA, No. 16-1430 (May 8, 2017).

[24] Utility Air Regulatory Group vs. EPA, 134 S. Ct. 2427 (2014). For further discussion of this case, see CRS Report R44807, *U.S. Climate Change Regulation and Litigation: Selected Legal Issues*, by Linda Tsang, p. 24.

[25] EPA, "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule," 81 *Federal Register* 35824, June 3, 2016.

[26] EPA, "Standards of Performance for Municipal Solid Waste Landfills: Final Rule," 81 Federal Register 59332, August 29, 2016; and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills: Final Rule," 81 *Federal Register* 59276, August 29, 2016.

[27] Industry trade associations and waste management and recycling companies have challenged EPA's 2016 revised emission guidelines for existing MSW landfills in the D.C. Circuit. Nat'l Waste and Recycling Ass'n v. EPA, No. 16-1371 (D.C. Cir., filed October 27, 2016); Utility Air Regulatory Group v. EPA, No. 16-1374 (D.C. Cir., filed October 28, 2016). Several states and industry groups are challenging the emission standards for new oil and gas sources. North Dakota v. EPA, No. 16-1242 (D.C. Cir. August 8, 2016). On April 7, 2017, the Department of Justice filed a motion, seeking to hold the cases in abeyance until after EPA completes its review of the rule and subsequent rulemakings resulting from its review. Notice of Exec. Order and Motion to Hold Cases in Abeyance, Am. Petroleum Inst. v. EPA, No. 13-1108 (D.C. Cir. April 7, 2017).

[28] Exec. Order No. 13783, 82 *Federal Register* 16093 §7 (March 31, 2017) (signed on March 28, 2017).

[29] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Grant of Reconsideration and Partial Stay, 82 *Federal Register* 25730, 25731-32 (June 5, 2017).

[30] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements, Proposed Rule, 82 *Federal Register* 27645 (June 16, 2017). The agency also proposed a three-month stay to cover the gap period from when the two-year delay is finalized to its effective date pursuant to the Congressional Review Act (CRA). Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements, Proposed Rule, 82 *Federal Register* 27641 (June 16, 2017). In the proposal, EPA explains that if the two-year stay is finalized, it would likely be considered a "major rule" under the CRA. Ibid. at 27642. Under the CRA, a major rule cannot take effect until 60 days after publication in the

Statutory Authority

Q: Under what authority did EPA promulgate the Clean Power Plan rule?

A: EPA cited Section 111(d) of the CAA[31] for its authority to promulgate the CPP.[32] Section 111(d) requires EPA, among other things, to issue regulations providing for states to submit plans to EPA to impose "standards of performance" for existing stationary sources for any air pollutant that meets certain criteria. The first criterion is that the air pollutant must not already be regulated under certain other CAA provisions,[33] which are discussed further below. The second criterion is that CAA Section 111(b) NSPSs apply to the source category for the air pollutant.[34] EPA finalized Section 111(b) NSPSs for new, modified, or reconstructed power plants for CO_2 when it issued the CPP rule.[35] EPA often refers to Section 111(d) regulations as "emission guidelines."[36]

Q: What does Section 111(d), the authority EPA cited for the Clean Power Plan, bar EPA from regulating?

A: CAA Section 111(d) bars EPA from regulating an air pollutant pursuant to Section 111(d) if the air pollutant is already regulated as a criteria pollutant under a National Ambient Air Quality Standard (NAAQS) under CAA Section 108 or, per EPA's interpretation, as a hazardous air pollutant (HAP) under CAA Section 112.[37] CO_2 is not regulated as a criteria pollutant or a HAP under either of these provisions.

Because the House and Senate passed different versions of CAA Section 111(d) in the 1990 CAA amendments, controversy exists over EPA's authority per the Section 112 criterion.[38] Under the House's provision, CAA Section 111(d)(1)(A)(i) requires EPA to issue a rule under which each

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Federal Register or after Congress receives the rule report, whichever is later. 5 U.S.C. § 801(a)(3). Based on its expectation that courts are not likely to consider a three-month stay to be a major rule under the CRA, the Administration anticipates that the three-month stay, if finalized, would take effect immediately upon its publication in the *Federal Register* and would stay the requirements for the period between the two-year stay's filing and effective dates. 82 *Federal Register* at 27642-43.

[31] 42 U.S.C. §7411(d).

[32] See EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, 64663-69, 64697, 64700-36, 64751-79, 64783-86, 64811-816, 64826, 64835-44, 64853-76, 64881-82, 64926, 64942, October 23, 2015.

[33] 42 U.S.C. §7411(d)(i).

[34] 42 U.S.C. §7411(d)(ii). CAA Section 111(b), 42 U.S.C. Section 7411(b), requires EPA to issue NSPSs for any stationary source category on an EPA-maintained list of source categories that "cause ... or contribute ... significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare."

[35] EPA, "Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64509, October 23, 2015.

[36] See, for example, ibid. (*passim*); 40 C.F.R. subparts C, Cc, Cd, Ce, UUUU.

[37] The CAA regulates emissions from stationary sources in multiple ways, three of which are relevant here. The first way is by NAAQSs, reserved for harmful but not extremely hazardous pollutants from "numerous or diverse mobile or stationary sources." CAA §108(a)(1)(B), 42 U.S.C. §7408(a)(1)(B). NAAQSs are implemented by source-specific emission limits imposed by states in "state implementation plans." CAA §110, 42 U.S.C. §7410. The second way is by federally prescribed national emission standards for hazardous air pollutants, that is, particularly harmful pollutants. CAA §112, 42 U.S.C. §7412. And the third, of interest here, is by federally prescribed standards of performance for new stationary sources. CAA §111, 42 U.S.C. §7411.

[38] See below, "Q: What legal arguments are being made for and against the final Clean Power Plan rule?" in the Judicial Review section.

state shall submit to EPA a plan adopting standards of performance for any air pollutant that "is not included on a list published under section 108(a) or emitted from a source category which is regulated under section 112.... "[39] Because EPA regulates power plants under Section 112 for HAP,[40] some have argued that EPA is barred from regulating power plants under Section 111(d) for CO_2, although CO_2 is not regulated as a HAP under Section 112.[41]

In the final CPP rule, EPA addressed this issue, finding the CAA Section 112 exclusion to "not bar the regulation under CAA section 111(d) of non-HAP from a source category, regardless of whether that source category is subject to standards for HAP under CAA section 112."[42] Describing the House amendment as ambiguous,[43] EPA stated that the "sole reasonable" interpretation is that "the phrase 'regulated under section 112' refers only to the regulation of HAP emissions. In other words, EPA's interpretation concluded that source categories 'regulated under section 112' are not regulated by CAA section 112 with respect to all pollutants, but only with respect to HAP."[44]

In making this argument, EPA also cited the Senate's 1990 amendment to CAA Section 111(d)(1)(A)(i), which is published in the *U.S. Statutes at Large* but not in the *U.S. Code*.[45] The Senate's amendment excludes from Section 111(d) regulation any air pollutant "included on a list published under section 108(a) or 112.... "[46] As such, the Senate language excludes air pollutants regulated under Section 112, rather than source categories, from Section 111(d) regulation, which is consistent with EPA regulating power plants for CO_2 under Section 111(d).

Q: When has EPA previously used its Section 111(d) authority?

A: An analysis by the American College of Environmental Lawyers observed that since the 1970s, EPA has promulgated emission guidelines under Section 111(d) of the CAA on seven occasions.[47]

EPA's 2005 Clean Air Mercury Rule (CAMR) delisted coal-fired electric utility steam generating units from Section 112 of the CAA and, instead, established a cap-and-trade system for mercury

[39] P.L. 101-549, §108(g), 104 Stat. 2399, 2467 (1990), codified at 42 U.S.C. §7411(d)(1)(A)(i).

[40] EPA has regulated HAPs from power plants under CAA Section 112 as part of its mercury and air toxics standards (MATS). The Supreme Court held that EPA's promulgation of the MATS rule was unlawful for failure to properly consider costs at the threshold stage of determining whether such regulation was "appropriate and necessary." Michigan v. EPA, 135 S. Ct. 2699, 2707-2711 (2015). It remanded the case to the court of appeals, which remanded the MATS rule without vacatur to EPA to make the additional findings required by the Supreme Court. White Stallion Energy Ctr. LLC v. EPA, No. 12-1100, order (D.C. Cir. December 15, 2015) (per curiam).

[41] See below, "Q: What legal arguments are being made for and against the final Clean Power Plan rule?"

[42] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64711, October 23, 2015.

[43] Ibid., 64712-64714.

[44] Ibid., 64714; see also below, "Q: What legal arguments are being made for and against the final Clean Power Plan rule?"

[45] If there is a discrepancy between the *U.S. Statutes at Large* and the *U.S. Code*, the *U.S. Statutes at Large* is the controlling legal evidence of the law, unless Congress has enacted the relevant title of the *U.S. Code* as positive law; in that case, the *U.S. Code* is also legal evidence of the law. See 1 U.S.C. §§112, 204(a).

[46] P.L. 101-549, §302(a), 104 Stat. 2399, 2574 (1990).

[47] American College of Environmental Lawyers, "Memorandum for Environmental Council of the States (ECOS) Concerning Clean Air Act 111(d) Issues," February 22, 2014, 5, 8-10, http://acoel.org/file.axd?file=2014%2F9%2FACOEL+Master+Memo+2-22-14+(1).pdf.

under Section 111(d);[48] however, the U.S. Court of Appeals for the D.C. Circuit vacated CAMR in 2008.[49] The court found that EPA's delisting of the source category from Section 112 was unlawful and that EPA was obligated to promulgate standards for mercury and other hazardous air pollutants under Section 112.[50] The court, therefore, did not reach the question of whether the flexible approach taken by EPA for mercury controls (i.e., a cap-and-trade system) met the requirements of Section 111(d).

In 1996, EPA used its Section 111(d) authority to regulate emissions of methane and non-methane organic compounds from large landfills.[51] These regulations set numeric emission limits and required designated landfills to use certain types of control equipment.[52] In August 2016, EPA revised emission guidelines for existing landfills operating prior to July 17, 2014.[53]

EPA also used its Section 111(d) authority for another emission guideline rule for large municipal waste combustors, which EPA proposed in 1989 and finalized in 1991 pursuant to a consent decree.[54] However, the 1990 CAA amendments added a new CAA Section 129 specifically to address emissions from solid waste incinerators, including municipal waste combustors. Section 129 required Section 111 NSPS and emission guidelines for solid waste incinerators to meet certain requirements,[55] so the 1991 rule for large municipal waste combustors was superseded by a later rule intended to comply with Section 129.[56] EPA adopted the remaining Section 111(d) emission guidelines for acid mist from sulfuric acid production units,[57] fluoride emissions from phosphate fertilizer plants,[58] total reduced sulfur emissions from kraft pulp mills,[59] and fluoride emissions from primary aluminum plants.[60] Additionally, EPA has promulgated six rules that implement Section 111(d) in conjunction with the requirements of CAA Section 129.[61]

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[48] 70 *Federal Register* 28606, May 18, 2005 (establishing Subpart HHHH).

[49] New Jersey vs. EPA, 517 F.3d 574 (D.C. Cir. 2008). EPA subsequently promulgated the MATS rule pursuant to CAA Section 112(d), which, as noted above, remains in litigation. 77 *Federal Register* 9304, February 16, 2012; see also footnote 40.

[50] New Jersey vs. EPA, 517 F.3d at 581-584.

[51] See generally EPA, "Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills," Final Rule, 61 *Federal Register* 9905, March 12, 1996.

[52] Ibid.

[53] EPA, "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," 81 *Federal Register* 59276, August 29, 2016.

[54] 56 *Federal Register* 5514, February 11, 1991 (establishing 40 C.F.R. Part 60, Subpart Ca, large municipal waste combustors and discussing background of rulemaking).

[55] 42 U.S.C. §7429. CAA Section 129 overrides some otherwise applicable aspects of Section 111(d) for solid waste combustion. For example, Section 129 requires that Section 111(d)/129 state plans be submitted to EPA within one year after promulgation of emission guidelines by EPA, whereas Section 111(d) plans have a different schedule.

[56] 60 *Federal Register* 65387, February 19, 1995 (establishing Subpart Cb under CAA Section 129).

[57] 42 *Federal Register* 55796, October 18, 1977; 56 *Federal Register* 5514, February 11, 1991; and 60 *Federal Register* 65387, December 19, 1995 (establishing current Subpart Cd).

[58] EPA, "Phosphate Fertilizer Plants, Final Guideline Document Availability," 42 *Federal Register* 12022, March 1, 1977.

[59] EPA, "Kraft Pulp Mills; Final Guideline Document; Availability," 44 *Federal Register* 29828, May 22, 1979.

[60] EPA, "Primary Aluminum Plants; Availability of Final Guideline Document," 45 *Federal Register* 26294, April 17, 1980.

[61] See footnote 47, 5-8 (citing 40 C.F.R. Parts Cb, Ce, BBBB, DDDD, FFFF, and MMMM).

Q: How do the Clean Power Plan standards for *existing* power plants relate to EPA's GHG standards for *new* fossil-fueled power plants?

A: EPA finalized standards for *new* fossil-fuel-fired power plants under Section 111(b) of the CAA on the same day it finalized the CPP rule.[62] As discussed earlier, when EPA sets NSPSs for a source category for an air pollutant under Section 111(b), EPA triggers Section 111(d)'s applicability for existing sources in the Section 111(b) regulated source category for the air pollutant if the air pollutant is neither regulated as a criteria pollutant under a NAAQS nor, according to EPA's interpretation, regulated as a HAP for the source category.[63] Consequently, EPA's adoption of NSPSs for new fossil-fueled power plants for CO_2 triggered Section 111(d)'s applicability for *existing* fossil-fueled power plants for CO_2.

Conversely, EPA has no authority to set Section 111(d) performance standards for existing sources in a source category for an air pollutant if EPA has no NSPSs for new sources in the source category for the air pollutant. Many of the petitioners challenging the CPP rule for existing power plants are also challenging EPA's NSPSs for new, modified, or reconstructed power plants for CO_2.[64] Because the CPP rule is predicated on the Section 111(b) NSPS rule, a court decision striking down or repeal of the NSPS rule would undermine the CPP rule's legal basis. Pursuant to Executive Order 13783, EPA is currently reviewing the NSPS rule.[65] Because EPA has not completed its review, it is unclear what actions, if any, EPA will take with respect to the NSPS rule.

Q: How does Section 111 define the term "standards of performance"?

A: The term "standards of performance" appears repeatedly in CAA Section 111, including in both the Section 111(b) provisions relating to new sources and the Section 111(d) provisions relating to existing sources in a source category. Section 111(a) defines "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 nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.[66]

Under this definition, EPA must determine the "best system of emission reduction" (BSER) that is "adequately demonstrated," considering certain factors. Then, EPA or states, as applicable, must base the standard for emissions on the degree of emission limitation that is "achievable" through the BSER. The CAA does not define these component terms within the definition of "standard of performance."

[62] EPA, "Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64509, October 23, 2015.

[63] See above, "Q: Under what authority did EPA promulgate the Clean Power Plan rule?" and "Q: What does Section 111(d), the authority EPA cited for the Clean Power Plan, bar EPA from regulating?"

[64] See below, "Q: Will the proposed repeal affect the Clean Power Plan litigation?" and "Q: Might other litigation affect the final Clean Power Plan rule?"

[65] Executive Order 13783, § 4(b)(ii), 82 *Federal Register* 16093 (March 31, 2017) (signed on March 28, 2017).

[66] CAA §111(a)(1), 42 U.S.C. §7411(a)(1).

As discussed in more detail below,[67] in the CPP rule, EPA determined the BSER for existing power plants based on three "building blocks": (1) efficiency improvements at affected coal-fired power plants, (2) generation shifts among affected power plants, and (3) renewable generating capacity.[68] It then used the BSER to set CO_2 emission performance rates.[69] EPA used a different approach to determine the BSER for new, modified, and reconstructed power plants.[70]

Courts have expanded on the CAA Section 111 definition of the term "standards of performance" and EPA's interpretation of its component terms, but they have done so generally with respect to NSPSs under Section 111(b) rather than emission guidelines for existing sources under Section 111(d).[71] As discussed further below,[72] EPA explains that the interpretation of the term "standards of performance" and related terms is guided by *Chevron U.S.A. Inc. v. NRDC*, 467 U.S. 837 (1984), in which the U.S. Supreme Court stated that if a statute "is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute."[73] However, some opponents of the CPP rule argue that this framework, known as "*Chevron* deference," should not apply, at least to certain aspects of EPA's interpretation of CAA Section 111.[74]

The Final Rule

Q: By how much would the Clean Power Plan reduce CO_2 emissions?

A: EPA's final rule does not set a future level of CO_2 emissions from existing electricity generators. The rule establishes uniform national CO_2 emission[75] performance rates—measured in pounds of CO_2 per megawatt-hour (MWh) of electricity generation—and state-specific CO_2 emission rate and emission targets. States determine which measure they want to use to be in compliance.

Although it has been widely reported that the rule would require a 32% reduction in CO_2 emissions from the electricity sector by 2030, compared to 2005 levels, this reduction was EPA's

[67] See "Q: How did EPA establish the national CO2 emission performance rates?"

[68] See generally EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, Part V, 80 *Federal Register* 64661, 64717-64811, October 23, 2015.

[69] See ibid., parts VI-VII, 80 *Federal Register* at 64811-64826.

[70] See EPA, "Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64509, 64626-28, October 23, 2015; see also EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, 64718-19 fn. 300, October 23, 2015 (characterizing EPA's interpretation of the requirements for standards of performance and BSER in the 111(b) and 111(d) rules for CO_2 from power plants as "generally consistent except to the extent that they reflect distinctions between new and existing sources").

[71] See, e.g., Lignite Energy Council v. EPA, 198 F.3d 930, 933 (D.C. Cir. 1999); Sierra Club v. Costle, 657 F.2d 298 (D.C. Cir. 1981); ASARCO Inc. v. EPA, 578 F.2d 319 (D.C. Cir. 1978); Essex Chemical Corp. v. Ruckelshaus, 486 F.2d 427 (D.C. Cir. 1973); Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 391 (D.C. Cir. 1973).

[72] See "Q: What legal arguments are being made for and against the final Clean Power Plan rule?"

[73] 467 U.S. at 842-43.

[74] See "Q: What legal arguments are being made for and against the final Clean Power Plan rule?"

[75] The final rule does not address other GHG emissions. The primary GHGs emitted by humans (and estimated by EPA in its annual inventories) include CO_2, methane, nitrous oxide, sulfur hexafluoride, chlorofluorocarbons, HFCs, and PFCs.

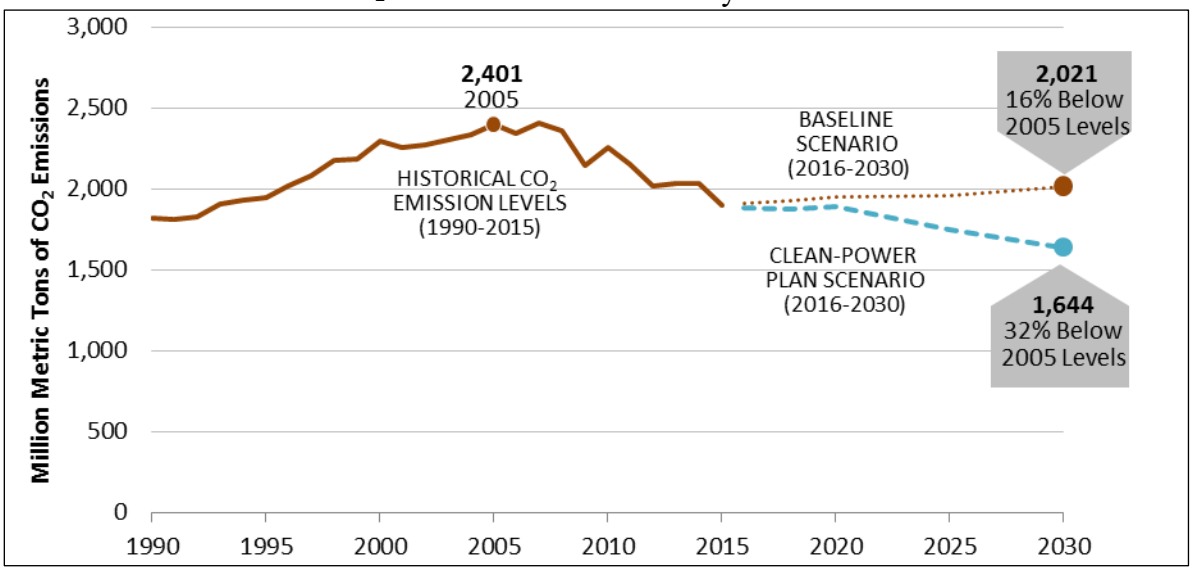
estimate of the rule's ultimate effect nationwide. The final rule does not explicitly *require* this level of emission reduction from electric generating facilities or states.

EPA used computer models to project these CO_2 emission levels. The actual emissions would depend on how states choose to comply with the rule and how much electricity is generated (and at what type of generation units).

Figure 4 compares EPA's projections of CO_2 emissions in the electricity sector resulting from the final rule with historical CO_2 emissions (1990-2015) from the electricity sector. The figure also illustrates the projected CO_2 emissions from the electricity sector under EPA's baseline scenario (i.e., business-as-usual). The figure indicates that the final rule would reduce CO_2 emissions in the electricity sector by 32% in 2030 compared to 2005 levels. Under the baseline scenario (without the rule), EPA projected a 16% reduction by 2030 compared to 2005 levels.

Figure 4. Historical Emissions and EPA Baseline and Clean Power Plan Projections

U.S. CO_2 Emissions from Electricity Generation



Source: Prepared by CRS; historical emissions from EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015*, April 2017; baseline and CPP projections from EPA, Power Sector Modeling, http://www.epa.gov/airmarkets/programs/ipm/cleanpowerplan.html.

Notes: CRS converted EPA's projected emissions from short tons to metric tons.

The Energy Information Administration (EIA) provided comparable results in its 2017 *Annual Energy Outlook*.[76] EIA estimated that under a reference case scenario, which includes the CPP and other assumptions, CO_2 emissions in the electricity sector would decrease by 36% in 2030 compared to 2005 levels. Under a scenario without the CPP, EIA estimated that CO_2 emissions in the electricity sector would decrease by 22% in 2030 compared to 2005 levels.

[76] EIA, *Annual Energy Outlook 2017*, January 2017, https://www.eia.gov/outlooks/aeo/.

Q: How much progress has already been made in reaching the CPP's emission reduction goals?

A: Due to a variety of factors, including market forces, state and federal regulations, technological innovation, and federal tax incentives, the electric power industry is changing rapidly.

Market forces have included

- the abundance and low price of natural gas;
- the flattening of demand for electric power; and
- advances that have sharply lowered the costs of renewable power.

These forces have resulted in the retirement of dozens of coal-fired power plants, their replacement by natural gas-fired and renewable generation, and a decline in GHG emissions from the power sector.

The market forces have been buttressed by state and federal regulations—principally, the renewable power requirements in place in about 30 states; the caps on GHG emissions in California and nine Northeastern states;[77] efficiency standards set in both state and federal regulations; emission standards limiting cross-state air pollution, mercury, and air toxic emissions; and standards for the disposal of coal combustion waste.

At the same time, significant technological innovations have been deployed, including high efficiency gas turbines, which result in less CO_2 per unit of power produced for new plants.

In addition, over the last decade, Congress has provided federal tax incentives for the use of wind and solar generation technologies.

As a result of this combination of factors, between 2005 and 2016, emissions of CO_2 from electric power generation declined almost 25%, while Gross Domestic Product grew and the amount of power generated remained essentially unchanged.[78] The CO_2 emission reduction already achieved represents 77% of the reduction that EPA expected the electric power sector to achieve by 2030 under the CPP.

Q: To whom does the Clean Power Plan directly apply?

A: The final rule directs governors (or their designees) to submit state-specific plans to EPA that describe how the states would meet their compliance obligations established by the final rule.

Q: What types of facilities are affected by the final rule?

A: The final rule addresses CO_2 emissions at "affected" electric generating units (EGUs). In general, an affected EGU is a fossil-fuel-fired unit that was in operation or had commenced construction as of January 8, 2014, has a generating capacity above a certain minimum threshold,

[77] CRS Report R41836, *The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress*, by Jonathan L. Ramseur.

[78] For data on CO_2 emissions and electric power generation, see EIA, *Monthly Energy Review*, October 2017, Tables 12.6 and 7.1, at https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf.

and sells a certain amount of its electricity generation to the grid.[79] The state-specific plans describe the requirements that would apply to affected EGUs.

Q: How many EGUs and facilities are affected by the final rule?

A: Based on data EPA provided in support of its final rule,[80] the affected EGU definition applied to approximately 3,000 EGUs at approximately 1,100 facilities. The number of EGUs and facilities varies by state.

Q: Does the Clean Power Plan apply to all states and territories?

A: EPA did not establish emission rate goals for Vermont and the District of Columbia, because they did not have affected EGUs. Although Alaska and Hawaii had targets in EPA's proposed rule, in its final rule, EPA stated that Alaska, Hawaii, and the two U.S. territories with affected EGUs (Guam and Puerto Rico) would not be required to submit state plans on the schedule required by the final rule, because EPA "does not possess all of the information or analytical tools needed to quantify" the best system of emission reduction for these areas. In the final rule preamble, EPA stated it would "determine how to address the requirements of section 111(d) with respect to these jurisdictions at a later time."[81]

Q: What was the deadline under the final rule for submitting state plans to EPA?

A: Under the final rule as promulgated, states were required to submit to EPA either an initial plan or final plan by September 6, 2016. If a state submitted an initial plan, the state could seek an extension from EPA to submit its final plan by September 6, 2018. If EPA granted this extension, the state would have been required to submit a progress report by September 6, 2017. Because the rule is currently stayed for the duration of the litigation, these deadlines do not have legal effect and will likely be delayed if the rule is ultimately upheld.

Q: What are the different options available to states when preparing their state plans?

A: States have several key decisions to make when crafting their state plans. Perhaps the most important decision is whether to measure compliance with an emission rate target (pounds of CO_2 per MWh) or a mass-based target (tons of CO_2). EPA provided both targets in its final rule. If a state decides to set up an emission (or emission rate) trading system, the trading system would be compatible only with systems using the same metric. In other words, a rate-based state cannot trade with a mass-based state.

In addition, the final rule allows for two types of state plans, described by EPA as (1) an "emission standards" approach and (2) a "state measures" approach. With an emission standards approach, a state would implement national CO_2 emission performance rates (discussed below) directly at the affected EGUs in the state. In contrast, a state measures approach would allow a

[79] For further details, see EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64715, October 23, 2015.

[80] See EPA, "Data File: Goal Computation Appendix 1-5," http://www2.epa.gov/cleanpowerplan/clean-power-plan-final-rule-technical-documents.

[81] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64743, October 23, 2015.

state to achieve the equivalent of the national CO_2 emission performance rates by using some combination of federally enforceable standards and elements that would be enforceable only under state laws (e.g., renewable energy and/or energy efficiency requirements).

Q: Can states join together and submit multi-state plans?

A: States have the option of submitting multi-state plans. The same deadlines apply to multi-state plans. A multi-state plan would employ either a rate-based or mass-based approach.

Q: What are the national CO_2 emission performance rates in the final rule?

A: The final rule establishes uniform national CO_2 emission performance rates—measured in pounds of CO_2 per MWh of electricity generation—for each of the two subcategories of EGUs affected by the rule (**Table 1**). These subcategories include (1) fossil-fuel-fired electric steam generating units, of which coal generation accounts for 94%—oil and natural gas contribute the remainder—and (2) stationary combustion turbines, namely natural gas combined cycle (NGCC) units.

The national rates are a major change from the proposed rule, which did not include similar performance rates at the EGU level. As discussed below, the national CO_2 emission performance rates are the underpinnings for the calculations that EPA used to develop state-specific emission rates and mass-based targets.

Table 1. National CO_2 Performance Rates

Pounds of CO_2 per Megawatt-hour

	2022	2023	2024	2025	2026	2027	2028	2029	2030	Interim (Average of 2022-2030)	Final (2030)
Fossil steam units	1,741	1,681	1,592	1,546	1,500	1,453	1,404	1,355	1,304	1,534	1,305
NGCC units	898	877	855	836	817	798	789	779	770	832	771

Source: Prepared by CRS; annual rates from EPA, *CO_2 Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule*, August 2015.

Note: To generate the final rates, EPA used the 2030 rates and rounded up to the next integer.

Q: How did EPA establish the national CO_2 emission performance rates?

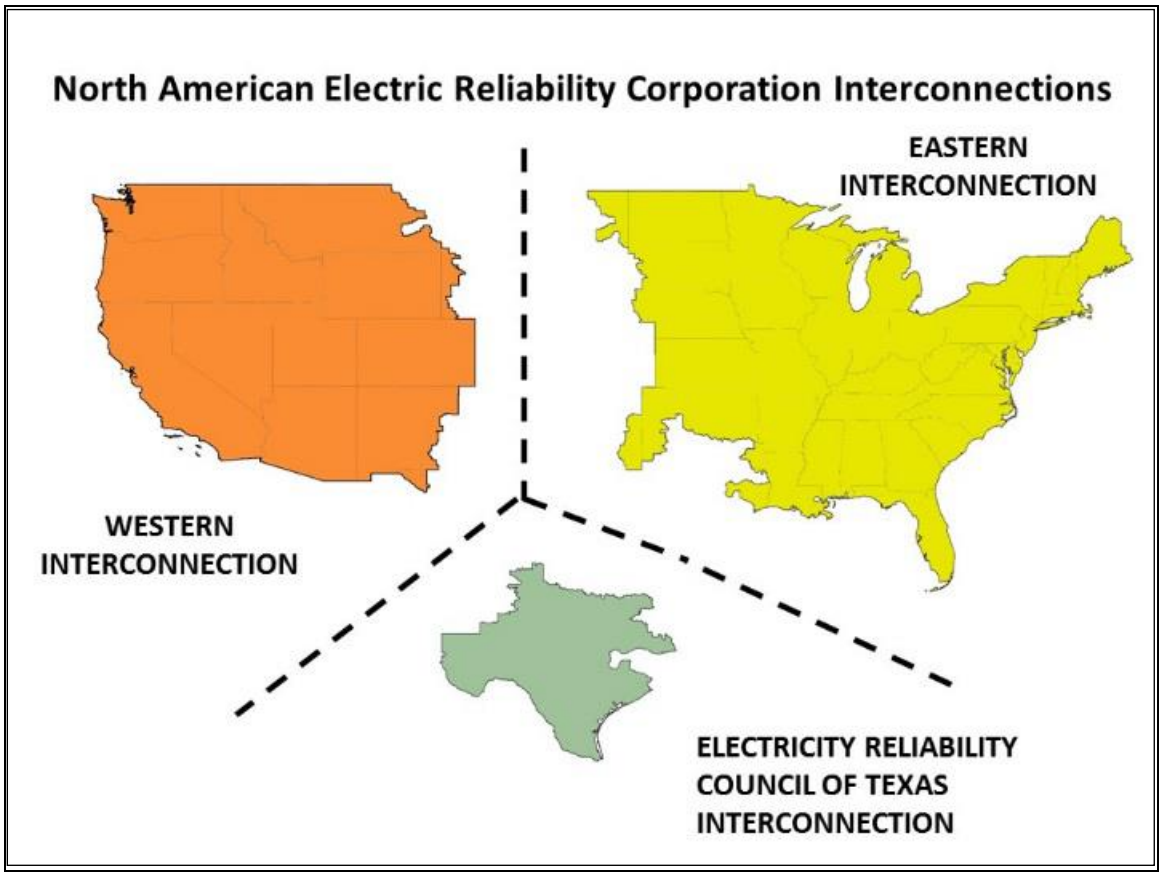
A: EPA compiled 2012 CO_2 emissions and electricity generation data from each affected EGU in each state. Then EPA divided the states into three regions (see **Figure 5**, aggregating the CO_2 emission and electricity generation data. Next, EPA applied three "building blocks" to the aggregated regional data:

- Building block 1: EPA applied heat rate improvements to coal-fired EGUs, improving their overall emission rate. The improvements vary by region from 2.1% to 4.3%.
- Building block 2: EPA assumed that NGCC generation would increase to a specific ceiling, displacing an equal amount of generation from steam units (primarily coal). Note that in the final rule, EPA applies building block 3 before building block 2, dampening the impact of building block 2.

- Building block 3: EPA projected annual increases in renewable energy generation, which resulted in corresponding decreases in generation from affected EGUs. EPA based the future increases on renewable energy generation increases between 2010 and 2014.

EPA's building block application produced annual CO_2 emission performance rates for steam and NGCC units in each region. EPA compared the rates in each of the three regions and chose the least stringent regional rate as the national standard for that particular year for each EGU category (**Table 1**).

Figure 5. Electricity Regions in EPA's Methodology



Source: Reproduced from EPA, *Overview of the Clean Power Plan: Cutting Carbon Pollution from Power Plants*, August 2015, http://www.epa.gov/airquality/cpp/fs-cpp-overview.pdf.

Notes: EPA did not establish emission rate goals for Vermont and the District of Columbia because they do not currently have affected EGUs. Although Alaska and Hawaii have targets in the proposed rule, in its final rule, EPA stated that Alaska, Hawaii, and the two U.S. territories with affected EGUs (Guam and Puerto Rico) will not be required to submit state plans on the schedule required by the final rule, because EPA "does not possess all of the information or analytical tools needed to quantify" the best system of emission reduction for these areas. EPA stated it will "determine how to address the requirements of section 111(d) with respect to these jurisdictions at a later time" (EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64743, October 23, 2015).

Q: How did EPA calculate the state-specific emission rate targets?

A: To generate state-specific emission rate targets, EPA applied the national CO_2 emission performance rates to each state's baseline (2012) of fossil fuel generation (steam generation vs. NGCC generation).

For example, in 2012, Arizona's electricity generation mix included

- 49% steam generation, and
- 51% NGCC generation.

To calculate Arizona's 2030 emission rate target, EPA multiplied the percentage of each generation type by the corresponding 2030 national CO_2 emission performance rate (**Table 1**):

(49% X 1,305 lbs. CO_2/MWh) + (51% X 771 lbs. CO_2/MWh) = 1,031 lbs. CO_2/MWh

Q: What are the state-specific emission rate targets?

A: **Table 2** lists the 2030 emission rate targets for each state and the 2012 emission rate baselines. In addition, the table lists the implied percentage reductions required to achieve the 2030 emission rate targets compared to the 2012 baselines.

EPA used different formulas to calculate the 2012 baselines in the proposed and final rules. The final rule baseline includes pounds of CO_2 generated from affected EGUs in each state (the numerator) divided by the electricity generated from these units. The proposed rule baseline included pounds of CO_2 generated from affected EGUs in each state (the numerator) divided by the electricity generated from these units and "at-risk" nuclear power and renewable energy generation (the denominator). Including these additional elements in the denominator often yielded lower baselines compared to the final rule.

Therefore, it is problematic to compare the percentage rate reductions from the proposed rule with the final rule, because the 2012 baseline calculations changed—sometimes dramatically—in the final rule. For example, Washington's 2012 baseline was 756 lbs. CO_2/MWh in the proposed rule. In the final rule, Washington's 2012 baseline increased by 107% to 1,556 lbs. CO_2/MWh.

Table 2. State-Specific Emission Rate Baselines (2012), Emission Rate Targets (2030), and Percentage Reductions Compared to Baselines

State	2012 Emission Rate Baseline	2030 Emission Rate Target	Percentage Change Compared to Baseline
	Pounds of CO_2 per megawatt-hour of electricity generation		
Alabama	1,518	1,018	33%
Alaska	Not established	Not established	NA
Arizona	1,552	1,031	34%
Arkansas	1,816	1,130	38%
California	954	828	13%
Colorado	1,904	1,174	38%
Connecticut	846	786	7%
Delaware	1,209	916	24%
Florida	1,221	919	25%

Georgia	1,597	1,049	34%
Hawaii	Not established	Not established	NA
Idaho	834	771	8%
Illinois	2,149	1,245	42%
Indiana	2,025	1,242	39%
Iowa	2,195	1,283	42%
Kansas	2,288	1,293	43%
Kentucky	2,122	1,286	39%
Louisiana	1,577	1,121	29%
Maine	873	779	11%
Maryland	2,031	1,287	37%
Massachusetts	1,003	824	18%
Michigan	1,928	1,169	39%
Minnesota	2,082	1,213	42%
Mississippi	1,151	945	18%
Missouri	2,008	1,272	37%
Montana	2,481	1,305	47%
Nebraska	2,161	1,296	40%
Nevada	1,102	855	22%
New Hampshire	1,119	858	23%
New Jersey	1,058	812	23%
New Mexico	1,798	1,146	36%
New York	1,140	918	19%
North Carolina	1,673	1,136	32%
North Dakota	2,368	1,305	45%
Ohio	1,855	1,190	36%
Oklahoma	1,565	1,068	32%
Oregon	1,089	871	20%
Pennsylvania	1,642	1,095	33%
Rhode Island	918	771	16%
South Carolina	1,791	1,156	35%
South Dakota	1,895	1,167	38%
Tennessee	1,985	1,211	39%
Texas	1,553	1,042	33%
Utah	1,790	1,179	34%
Virginia	1,366	934	32%
Washington	1,566	983	37%
West Virginia	2,064	1,305	37%

Wisconsin	1,996	1,176	41%
Wyoming	2,315	1,299	44%

Source: Prepared by CRS; final rule target and baseline data from EPA, *CO_2 Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule*, August 2015, and accompanying spreadsheets, http://www2.epa.gov/cleanpowerplan/clean-power-plan-final-rule-technical-documents. The interim and final targets are codified in 40 C.F.R. Part 60, Subpart UUUU, Table 2.

Notes: EPA did not establish emission rate goals for Vermont and the District of Columbia because they do not currently have affected EGUs. Although Alaska and Hawaii had targets in the proposed rule, in its final rule, EPA stated that Alaska, Hawaii, and the two U.S. territories with affected EGUs (Guam and Puerto Rico) will not be required to submit state plans on the schedule required by the final rule, because EPA "does not possess all of the information or analytical tools needed to quantify" the best system of emission reduction for these areas. EPA stated it will "determine how to address the requirements of section 111(d) with respect to these jurisdictions at a later time" (EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64743, October 23, 2015).

Q: How did EPA calculate the state-specific mass-based targets?

A: EPA's conversion from emission rate targets to mass-based targets involved two steps. First, EPA multiplied a state's emission rate target (lbs. CO_2/MWh) for a particular year (e.g., 2022) by the state's 2012 CO_2 generation baseline (MWh). This yields an initial mass-based value for that year.

Second, EPA determined the amount of renewable energy generation (pursuant to building block 3) that would not be needed to achieve the emission rate targets. This "excess" generation is available because EPA chose the least stringent of the three regional CO_2 performance rates as the national CO_2 performance rate.[82] EPA explained:

> Due to the nature of the emission performance rate methodology, which selects the highest of the three interconnection-based values for each source category as the CO_2 emission performance rate, there are cost-effective lower-emitting generation opportunities quantified under the building blocks that are not necessary for affected EGUs in the Western and Texas interconnections to demonstrate compliance at historical generation levels.[83]

EPA calculated the CO_2 emissions associated with this "excess" generation and allocated the CO_2 emissions to all of the states based on their 2012 generation, increasing their annual mass-based targets. As a result, some of the states' 2030 mass-based targets are higher than their 2012 emission baselines.

EPA based the renewable energy allocation on each state's share of total electricity generation in 2012 from affected EGUs. For example, in 2012, Florida's affected EGUs accounted for 8% of the generation from all affected EGUs nationwide, so Florida received 8% of the excess renewable energy generation in the mass-based calculation.

Q: What are the state-specific mass-based targets?

A: **Table 3** lists the state-specific, mass-based targets from EPA's final rule. The table compares the 2030 targets with the 2012 baselines as calculated for the final rule and provides a percentage

[82] For further discussion of these calculations, see EPA, *CO_2 Emission Performance Rate and Goal Computation Technical Support Document for the CPP Final Rule*, August 2015, https://www.regulations.gov/document?D=EPA-HQ-OAR-2013-0602-36850.

[83] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64822, October 23, 2015.

change between the two values. Most of the states have emission reduction requirements, but three states (Connecticut, Idaho, and Maine) have 2030 targets that are higher than their 2012 baselines (as discussed above).

Table 3. State-Specific 2012 CO_2 Emission Baselines and 2030 CO_2 Emission Targets

Short Tons—Alphabetical by State

State	2012 CO_2 Emission Baseline	2030 CO_2 Emission Targets	Percentage Change
Alabama	75,571,781	56,880,474	-25%
Alaska	Not established	Not established	Not established
Arizona	40,465,035	30,170,750	-25%
Arkansas	43,416,217	30,322,632	-30%
California	49,720,213	48,410,120	-3%
Colorado	43,209,269	29,900,397	-31%
Connecticut	6,659,803	6,941,523	4%
Delaware	5,540,292	4,711,825	-15%
Florida	124,432,195	105,094,704	-16%
Georgia	62,843,049	46,346,846	-26%
Hawaii	Not established	Not established	Not established
Idaho	1,438,919	1,492,856	4%
Illinois	102,208,185	66,477,157	-35%
Indiana	110,559,916	76,113,835	-31%
Iowa	38,135,386	25,018,136	-34%
Kansas	34,655,790	21,990,826	-37%
Kentucky	92,775,829	63,126,121	-32%
Louisiana	44,391,194	35,427,023	-20%
Maine	2,072,157	2,073,942	0.1%
Maryland	20,171,027	14,347,628	-29%
Massachusetts	13,125,248	12,104,747	-8%
Michigan	69,860,454	47,544,064	-32%
Minnesota	34,668,506	22,678,368	-35%
Mississippi	27,443,309	25,304,337	-8%
Missouri	78,039,449	55,462,884	-29%
Montana	19,147,321	11,303,107	-41%
Nebraska	27,142,728	18,272,739	-33%
Nevada	15,536,730	13,523,584	-13%
New Hampshire	4,642,898	3,997,579	-14%
New Jersey	19,269,698	16,599,745	-14%
New Mexico	17,339,683	12,412,602	-28%
New York	34,596,456	31,257,429	-10%

State	2012 CO_2 Emission Baseline	2030 CO_2 Emission Targets	Percentage Change
North Carolina	67,277,341	51,266,234	-24%
North Dakota	33,757,751	20,883,232	-38%
Ohio	102,434,817	73,769,806	-28%
Oklahoma	52,862,077	40,488,199	-23%
Oregon	9,042,668	8,118,654	-10%
Pennsylvania	119,989,743	89,822,308	-25%
Rhode Island	3,735,786	3,522,225	-6%
South Carolina	35,893,265	25,998,968	-28%
South Dakota	5,121,124	3,539,481	-31%
Tennessee	41,387,231	28,348,396	-32%
Texas	251,848,335	189,588,842	-25%
Utah	32,166,243	23,778,193	-26%
Virginia	35,733,502	27,433,111	-23%
Washington	15,237,542	10,739,172	-30%
West Virginia	72,318,917	51,325,342	-29%
Wisconsin	42,317,602	27,986,988	-34%
Wyoming	50,218,073	31,634,412	-37%

Source: Prepared by CRS using data from EPA, *CO_2 Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule* (August 2015). The interim and final targets are codified in 40 C.F.R. Part 60, Subpart UUUU, Table 3.

Notes: EPA did not establish emission targets for Vermont and the District of Columbia because they do not currently have affected EGUs. Although Alaska and Hawaii had targets in the proposed rule, in its final rule, EPA stated that Alaska, Hawaii, and the two U.S. territories with affected EGUs (Guam and Puerto Rico) will not be required to submit state plans on the schedule required by the final rule, because EPA "does not possess all of the information or analytical tools needed to quantify" the best system of emission reduction for these areas. EPA stated it will "determine how to address the requirements of section 111(d) with respect to these jurisdictions at a later time" (EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64743, October 23, 2015).

Q: Does the Clean Power Plan apply to EGUs on Indian lands?

A: The final rule established emission rate and emission targets for three areas of Indian country:

- the Navajo Nation,
- the Ute Tribe of the Uintah and Ouray Reservation, and
- the Fort Mojave tribe.

The targets (**Table 4**) are based on two facilities in the Navajo Nation (the Navajo Generating Station and the Four Corners Power Plant), the South Point Energy Center on the Fort Mojave Reservation, and the Bonanza Power Plant on the Uintah and Ouray Indian Reservation.

Table 4. Emission Rate and Emission Targets for Areas of Indian Country

Area of Indian Land	2012 CO_2 Emission Rate Baseline	2030 CO_2 Emission Rate Target	Percentage Change	2012 CO_2 Emission Baseline	2030 CO_2 Emission Targets	Percentage Change
Fort Mojave Tribe	858	771	-10%	583,530	588,519	1%
Navajo Nation	2,121	1,305	-38%	31,416,873	21,700,586	-31%
Ute Tribe	2,145	1,305	-39%	3,314,097	2,263,431	-32%

Source: Prepared by CRS. The targets are codified in 40 C.F.R. Part 60, Subpart UUUU, Table 2 (emission rates) and Table 3 (mass-based).

EPA stated that tribes have "the opportunity, but not the obligation," to establish and submit a plan (after obtaining the necessary approval from EPA) to meet their emission rate targets. If a tribe does not seek approval to submit its own plan, EPA is responsible for establishing a plan, if the agency determines, at a later date, that "a plan is necessary or appropriate."[84]

On October 23, 2015, in addition to finalizing the CPP and NSPSs for EGUs, EPA *proposed* a rule for a federal plan, which would be implemented by EPA in states that do not submit a satisfactory state implementation plan.[85] In the federal plan rule, EPA proposed "to find that it is necessary or appropriate to regulate affected EGUs in each of the three areas of Indian country that have affected EGUs under the proposed federal plan."[86] Therefore, EPA would develop and implement the federal plan for EGUs in the relevant Indian lands, unless the tribal governments received EPA approval to submit their own plans to meet their emission targets. However, pursuant to President Trump's Executive Order 13783, EPA withdrew the federal plan proposed rule on April 3, 2017.[87]

Although EPA withdrew the proposed federal plan, the targets in Indian lands established by the final rule remain. If the final rule is upheld in court, the agency would need to develop and finalize a new federal plan if it determines that "a plan is necessary or appropriate" if a tribe does not seek approval to submit its own plan.

Q: Would states and companies that have already reduced GHG emissions receive credit for doing so?

A: States would not receive "credit" in their emission rate or emission targets for emission reduction measures already taken. Whether individual power companies would receive some type of credit would be decided by states as they develop their implementation plans. The rule requires

[84] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64664, October 23, 2015.

[85] EPA, "Federal Plan Requirements for Greenhouse Gas Emissions from Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations," Proposed Rule, 80 *Federal Register* 64966, October 23, 2015.

[86] EPA, "Federal Plan Requirements for Greenhouse Gas Emissions from Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations," Proposed Rule, 80 *Federal Register* 65033, October 23, 2015.

[87] EPA, "Withdrawal of Proposed Rules," 82 *Federal Register* 16144, April 3, 2017.

each state to submit an implementation plan to EPA that identifies what measures/regulations the state would implement to reach its goal.

EPA used 2012 data to prepare the national CO_2 emission performance rates and each state's emission rate and emission targets. The final rule does not have a process for providing credit for emissions reductions made prior to 2012. EPA contended that states that began action prior to 2012, including a shift to less carbon-intensive energy sources or energy efficiency improvements, would be "better positioned" to meet state-specific emission rate goals.[88] However, some stakeholders would likely argue that the 2012 demarcation is unfair to states where investments in substantial amounts of low-carbon generation technology and/or energy efficiency improvements were made prior to 2012.

Q: How does EPA's Clean Power Plan interact with existing GHG emission reduction programs in the states, namely the Regional Greenhouse Gas Initiative and California's climate policies?

A: A number of U.S. states have already required greenhouse gas (GHG) emission reductions. The most aggressive actions have come from a coalition of states from the Northeast and Mid-Atlantic regions—the Regional Greenhouse Gas Initiative[89]—and California.[90]

The Regional Greenhouse Gas Initiative (RGGI) is a cap-and-trade system involving nine states that took effect in 2009.[91] RGGI applies to CO_2 emissions from electric power plants with capacities to generate 25 megawatts or more.

Pursuant to legislation passed in 2006, California established a cap-and-trade program that took effect in 2013. California's cap applies to multiple GHGs from multiple economic sectors, covering approximately 85% of California's GHG emissions. In addition, California has other policies and regulations that address GHG emissions directly and indirectly.[92]

EPA allows states considerable flexibility in meeting their emission rates or emission targets. For example, states can establish new programs to meet their goals or use existing programs and regulations. Moreover, states can meet their goals individually or collaborate with other states to create (or use existing) multistate plans.

Both California and the RGGI states have taken action to extend the emission caps in their respective programs beyond 2020. In July 2017, California enacted AB 398, which extends the state's cap-and-trade program through 2030.[93] The legislation received a two-thirds vote, which may help avoid subsequent legal challenges.[94]

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[88] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64897, October 23, 2015.

[89] See CRS Report R41836, *The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress*, by Jonathan L. Ramseur. See also http://www.rggi.org/.

[90] See http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm.

[91] Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. New Jersey participated in the program from 2009 through the end of 2011.

[92] More details are available at http://www.climatechange.ca.gov/.

[93] For more details, see this Press Release, https://www.gov.ca.gov/news.php?id=19891.

[94] Some stakeholders challenged the original legislation (AB 32) in state court. They argued the program's emission auction represented an unconstitutional tax, which requires a two-thirds vote in the legislature. After lower court losses, stakeholders sought a review from the California Supreme Court. In June 2017, the California Supreme Court denied a

In August 2017, RGGI state officials announced an initial agreement to extend the RGGI program through 2030, with additional emission reductions.[95] The agreement is still in its early stages and will undergo a public comment process. RGGI states would then need to update their respective statutes or regulations to implement the program changes. In addition, Virginia has taken recent steps to potentially join the regional partnership, releasing a draft proposal of emission reduction regulations in November 2017 that would link with the RGGI program.[96]

Q: What role is there for "outside-the-fence" emission reductions?

A: The respective roles of actions that individual power plants take (i.e., "inside the fence" actions, such as the adoption of pollution control devices or fuel switching) versus actions by other actors, including energy consumers ("outside the fence" actions) have been the subject of much of the controversy surrounding the CPP. "Outside-the-fence" emission reductions play a central role in the methodology EPA used to establish the national CO_2 emission performance rates, which, in turn, provide the foundation for state-specific targets. In particular, building block 3 (discussed above) includes incremental increases of renewable energy generation, with corresponding decreases in electricity generation by fossil-fuel-fired units. Renewable energy appears to play a greater role in the final rule's methodology than in the proposed rule. However, the final rule omits building block 4 from the proposed rule, which included energy efficiency improvements other than by the fossil fuel-fired units.

Although outside-the-fence activities were a major component of EPA's target calculations, the degree to which outside-the-fence emission reductions would be used would depend on the policies and requirements states implement through their state plans.

Q: How would new fossil-fuel-fired power plants and their resulting electricity generation and emissions factor into a state's emission rate or emission calculations?

A: In EPA's final rule, new EGUs are treated differently under rate-based and mass-based plans. Under a mass-based approach, states have the option of including new fossil-fuel-fired sources in their emission reduction plans. In its final rule, EPA provided mass-based emission targets that include projections of new sources (described by EPA as a "new source complement").[97] This inclusion would facilitate emissions trading within the state and with other states. These new sources would remain subject to the performance standards under CAA Section 111(b).[98]

In its proposed rule, EPA considered whether states could include new NGCC units in their emission rate calculations. In the final rule, EPA specifically prohibited states from including new NGCC units as a means of directly adjusting the state's emission rate. However, if a new NGCC

petition for review.

[95] See http://www.rggi.org/docs/ProgramReview/2017/08-23-17/Announcement_Proposed_Program_Changes.pdf.

[96] For more information, see http://www.deq.virginia.gov/Programs/Air/GreenhouseGasPlan.aspx.

[97] For further details on how EPA calculated the new source complement emissions, see EPA, *New Source Complements to Mass Goals, Technical Support Document for CPP Final Rule*, August 2015, https://www.regulations.gov/document?D=EPA-HQ-OAR-2013-0602-37110.

[98] See EPA, "Standards of Performance for Greenhouse Gas Emissions for New, Modified, and Reconstructed Stationary Sources; Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64510, October 23, 2015.

were to effectively replace existing electricity generation from a coal-fired EGU, the state's emission rate would likely decrease with the removal of the coal-fired unit.[99]

Q: What role does nuclear power play in the Clean Power Plan rule?

A: EPA modified its treatment of nuclear power in the final rule. In its proposed rule, EPA factored "at risk" nuclear power (estimated at 5.8% of existing capacity) into the state emission rate methodology. As a result, states would have had an incentive to maintain the at-risk nuclear power generation so their emission rates would not increase (all else being equal). The final rule does not include at-risk nuclear generation in its building block calculations.

In addition, in its final rule, EPA decided not to include under-construction nuclear power capacity in the emission rate calculations. Including the estimated generation from these anticipated units in the emission rate equation would have substantially lowered the emission rate targets in Georgia, South Carolina, and Tennessee. If the final rule had retained this feature, and these nuclear units did not enter service, these three states would likely have more difficulty achieving their emission rate goals.[100]

EPA clarified that the final rule would allow the generation from under-construction units, new nuclear units, and capacity upgrades to help sources meet emission rate or emission targets.

Q: What role does energy efficiency play in the Clean Power Plan final rule?

A: In EPA's proposed rule, demand-side energy efficiency (EE) improvements were part of the agency's state-specific emission rate target calculations ("building block 4"). However, in its final rule, EPA did not include demand-side EE improvements as part the agency's national CO_2 emission performance rate calculations, which underlie the state-specific targets.

Although EPA removed demand-side EE assumptions from its target calculations, states may choose to employ EE improvement activities as part of their plans to meet their targets. In particular, the final rule included a new voluntary program that provided incentives for early investments (in 2020 and 2021) in EE programs in low-income communities (as discussed below).

In addition, in its 2015 *Regulatory Impact Analysis* (RIA) for the final rule, EPA assumed that EE will play an important role in meeting compliance obligations:

> [EE] is a highly cost-effective means for reducing CO_2 from the power sector, and it is reasonable to assume that a regulatory requirement to reduce CO_2 emissions will motivate parties to pursue all highly cost-effective means for making emission reductions accordingly, regardless of what particular emission reduction measures were assumed in determining the level of that regulatory requirement.[101]

[99] For a discussion of this issue, see EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64903, October 23, 2015.

[100] For a discussion of the financial challenges facing the nuclear power industry, see CRS Report R44715, *Financial Challenges of Operating Nuclear Power Plants in the United States*, by Phillip Brown and Mark Holt.

[101] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Clean Power Plan Final Rule*, October 23, 2015, at https://www.regulations.gov/document?D=EPA-HQ-OAR-2013-0602-37105 (hereinafter, "2015 RIA").

Q: What role does biomass play in the Clean Power Plan?

A: In its final rule, EPA would allow states to use "qualified biomass" as a means of meeting state-specific reduction requirements. EPA defined qualified biomass as a "feedstock that is demonstrated as a method to control increases of CO_2 levels in the atmosphere."[102] This appears to be a narrower approach than was taken in the proposed rule. Also, EPA required additional accounting and reporting requirements if a state decides to use qualified biomass. The agency gave some indication as to which biomass types may qualify.[103]

Q: What is the Clean Energy Incentive Program?[104]

A: The Clean Energy Incentive Program (CEIP) is a voluntary program that would complement the CPP. The CEIP encourages states to support energy efficiency measures and renewable energy projects before the first CPP compliance obligations are scheduled to take effect in 2022. In order to participate in the CEIP, states would need to include particular design elements in their final state plans.

EPA established the framework of the CEIP in its CPP final rule in 2015. EPA issued a proposed rule for the CEIP that was published in the *Federal Register* on June 30, 2016.[105] The proposed rule provided additional details, clarified certain elements that were previously outlined, and altered some of the program eligibility requirements. In response to President Trump's Executive Order 13783 to review and potentially revise the CPP, EPA withdrew the CEIP 2016 proposed rule on April 3, 2017.[106] The following discussion describes the CEIP as established in the CPP 2015 final rule.

The CEIP would create a system to award credits to energy efficiency projects in low-income communities and renewable energy projects (only wind and solar) in participating states. The credits would take the form of emission rate credits (ERCs) or emission allowances, depending on whether a state uses an emission rate or mass-based target, respectively. The credits could be sold to or used by an affected emission source to comply with the state-specific requirements (e.g., emission rate or mass-based targets).

Renewable energy projects would receive one credit (either an allowance or ERC) from the state and one credit from EPA for every two MWh of solar or wind generation. EE projects in low-income communities would receive double credits: For every two MWh of avoided electricity generation, EE projects will receive two credits from the state and two credits from EPA. EPA would match up to the equivalent of 300 million short tons in credits during the CEIP program life. The amount of EPA credits potentially available to each state participating in the CEIP depends on the relative amount of emission reduction each state is required to achieve compared to its 2012 baseline. Thus, states with greater reduction requirements would have access to a greater share of the EPA credits.

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[102] Defined in the final rule regulations (40 C.F.R. §60.5880); EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64662, October 23, 2015.

[103] For further information, see CRS In Focus IF10280, *The Clean Power Plan (CPP): The Treatment of Biomass*, by Kelsi Bracmort.

[104] For more information, see CRS Report R44607, *EPA's Clean Energy Incentive Program: Background and Legal Developments*, by Jonathan L. Ramseur and Linda Tsang.

[105] EPA, "Clean Energy Incentive Program Design Details," 81 *Federal Register* 42940, June 30, 2016.

[106] EPA, "Withdrawal of Proposed Rules," 82 *Federal Register* 16144, April 3, 2017.

To generate the credits, states would effectively borrow from their mass-based or rate-based compliance targets for the interim 2022-2029 compliance period. EPA would provide its share of credits from a to-be-established reserve.

Q: How did the final Clean Power Plan differ from the proposed rule?

A: EPA's 2015 final rule was different from EPA's 2014 proposed rule in multiple respects. A key change was the establishment of national CO_2 emission performance rates for the sources affected by the rule: fossil-fuel-fired electric steam generating units and stationary combustion turbines.

EPA used what it called "building blocks" to derive the national emission performance rates and state-specific targets based on the national rates. The final rule's state-specific targets differed from those in the proposed rule, because in the final rule, EPA applied its building block assumptions to regional-level data to create regional CO_2 emission performance rates. These regional rates led to national rates, which were then used to produce state-specific emission rate and emission targets. By contrast, in the proposed rule, EPA applied building blocks to state-level data, yielding different outcomes.

In addition, EPA modified its target creation methodology (e.g., building blocks) in the final rule. Key modifications included adjustments to

- renewable energy,
- natural gas combined cycle (NGCC) displacement of coal-fired electricity generation,
- heat rate improvements at coal-fired units,
- energy efficiency,
- nuclear power, and
- state-specific 2012 baselines.

These methodological changes impacted only the state-specific targets. States can choose to use a variety of mechanisms to meet their targets, including, but not limited to, the emission reduction activities assumed in EPA's methodology.

In addition, state compliance with the final rule begins in 2022 instead of 2020 under the proposed rule. The final rule has additional compliance options available to states, particularly in the form of state plans.

Q: If the Clean Power Plan is upheld and not repealed, what would be the next steps in its implementation?

A: EPA cannot enforce the rule while it is stayed, pursuant to Supreme Court order, for the duration of the litigation over the rule.[107]

The final rule, as promulgated, set a deadline of September 6, 2016, for each state to submit a State Implementation Plan to EPA.[108] In lieu of a completed plan, the final rule authorized a state to make an initial submittal by that date and request up to two additional years to complete its

[107] See Order in Pending Case, West Virginia v EPA (S. Ct. No. 15A773, February 9, 2016), available at https://www.supremecourt.gov/orders/courtorders/020916zr_21p3.pdf.

[108] As noted below in "Q: What happens if a state fails to submit an adequate plan by the appropriate deadline?," EPA cannot compel a state to submit a plan, but the statute authorizes EPA to impose a federal plan on the state if a state does not submit a satisfactory plan by EPA's deadline.

submission. For the extension of time to be granted, the final rule required the initial submittal to address three components sufficiently to demonstrate that the state is able to submit a final plan by September 6, 2018:

1. an identification of the final plan approach or approaches under consideration, including a description of progress made to date;
2. an appropriate explanation for why the state needs additional time to submit a final plan; and
3. a demonstration of how the state has been engaging with the public, including vulnerable communities, and a description of how it intends to meaningfully engage with community stakeholders during the additional time.

In light of the stay, these near-term deadlines lack legal effect. If the rule is ultimately upheld or remanded back to EPA, but is not repealed, then initial compliance deadlines would likely be extended until a revised rule is finalized.[109] Following submission of final plans, EPA would review the submittals to determine whether they are approvable.

The interim compliance period for the rule, as promulgated, begins in 2022, although it is possible that this compliance date could be delayed as well if the rule is ultimately upheld and not repealed. EPA set an eight-year interim period that begins in 2022 and runs through 2029 and is separated into three steps (2022-2024, 2025-2027, and 2028-2029), each with its own interim goal. Affected EGUs would have to meet each of the step 1, 2, and 3 CO_2 emission performance rates or follow an EPA-approved emissions reduction trajectory designed by the state itself for the eight-year period from 2022 to 2029. The final rule, as promulgated, requires compliance with the state's final goal by 2030.

Q: What incentives are there for early compliance?

A: In general, the CPP states

> Incremental emission reduction measures, such as RE [renewable energy] and demand-side EE, can be recognized as part of state plans, but only for the emission reductions they provide during a plan performance period. Specifically, this means that measures installed in any year after 2012 are considered eligible measures under this final rule, but only the quantified and verified MWh of electricity generation or electricity savings that they produce in 2022 and future years may be applied toward adjusting a CO_2 emission rate.[110]

As noted earlier, however, the CPP provided incentives for states to adopt measures to reduce emissions in 2020 and 2021 under the CEIP. Under the CEIP, EPA would provide credits against CPP requirements for wind and solar projects that commence construction after the date that a state submits its final plan to EPA and that generate metered electricity in 2020 and 2021. EPA

[109] See, for example, EPA, "Rulemaking to Amend Dates in Federal Implementation Plans Addressing Interstate Transport of Ozone and Fine Particulate Matter," Interim Final Rule, 79 *Federal Register* 71663, December 3, 2014 (delaying compliance deadlines after court lifted stay of rule and granting EPA motion to toll deadlines for three years, reflecting length of the litigation); Michigan v. EPA, No. 98-1497 (D.C. Cir. June 22, 2000) (order lifting stay of a rule relating to interstate transport of air pollution and extending compliance deadlines for State Implementation Plan submissions required by the rule for the same number of days that the stay had been in effect).

[110] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64896, October 23, 2015.

would provide double credits for EE measures that result in reducing electricity consumption in low-income communities in participating states in the same two years.[111]

Q: If the Clean Power Plan is upheld and goes into effect, what happens if a state fails to submit an adequate plan by the appropriate deadline?

A: EPA cannot compel a state to submit a Section 111(d) plan. Rather, if a state fails to submit a satisfactory plan by EPA's deadline, CAA Section 111(d) authorizes EPA to prescribe a plan for the state. This authority is the same, Section 111(d) says, as EPA's authority to prescribe a federal implementation plan (FIP) when a state fails to submit a state implementation plan to achieve a National Ambient Air Quality Standard (NAAQS).[112] EPA proposed a model FIP on August 3, 2015 (which appeared in the *Federal Register* on October 23, 2015), but withdrew it as directed by Executive Order 13783.[113] If the CPP is upheld in court and is not repealed, EPA would need to re-propose a FIP for states that fail to submit an approvable plan to EPA.

Q: What would the proposed FIP have required?

A: Just as EPA cannot compel a state to submit a state plan, it also cannot compel a state to meet its average emission targets. FIPs, therefore, would require compliance by individual EGUs in the affected state. The proposed FIP would set either emission rates or emission limits for affected EGUs. According to EPA, the stringency of the federal plan would be the same as the national CO_2 emission performance rates specified in the CPP.[114] In addition, the FIP would establish a trading program that could be used by affected EGUs to meet those limits. If the agency chooses to implement a mass-based program, the proposal envisions the allocation of allowances to individual EGUs based on their historical emissions during the years 2010-2012.[115]

Although the proposed rule set forth both a mass-based and a rate-based option for the proposed trading program, the agency stated that it intended to finalize a single approach—that is, either a rate-based or a mass-based approach—in all FIPs "in order to enhance the consistency of the federal trading program, achieve economies of scale through a single, broad trading program, ensure efficient administration of the program, and simplify compliance planning for affected EGUs."[116] While accepting comments on both approaches, the agency appeared to be leaning toward a mass-based option for use in the FIPs, stating that it

> would be more straightforward to implement compared to the rate-based trading approach, both for industry and for the implementing agency. The EPA, industry, and many state agencies have extensive knowledge of and experience with mass-based trading programs. The EPA has more than two decades of experience implementing federally-administered

[111] For additional information, see "Q: What is the Clean Energy Incentive Program?" above.

[112] CAA §110(c); 42 U.S.C. §7410(c).

[113] See EPA, "Federal Plan Requirements for Greenhouse Gas Emissions from Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations," Proposed Rule, 80 *Federal Register* 64966, October 23, 2015. EPA, "Withdrawal of Proposed Rules," 82 *Federal Register* 16144, April 3, 2017.

[114] See the proposed FIP, page 64970.

[115] For a discussion of the proposed allowance allocation system, see EPA, "Allowance Allocation Proposed Rule Technical Support Document (TSD)," August 2015, http://www2.epa.gov/sites/production/files/2015-11/documents/tsd-fp-allowance-allocations.pdf.

[116] EPA, "Federal Plan Requirements for Greenhouse Gas Emissions from Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations," Proposed Rule, 80 *Federal Register* 64970, October 23, 2015.

> mass-based emissions budget trading programs including the Acid Rain Program (ARP) sulfur dioxide (SO_2) trading program, the Nitrogen Oxides (NOX) Budget Trading Program, CAIR, and CSAPR. The tracking system infrastructure exists and is proven effective for implementing such programs.[117]

EPA noted that, under its proposed FIP rule, states with FIPs could still participate in the implementation of the program under these conditions:

- After a federal plan is put in place for a particular state, the state would still be able to submit a plan, which, if approved, would allow the state and its EGUs to exit the federal plan.
- States would be allowed to take delegation of administrative aspects of the federal plan in order to become the primary implementers, or they could submit partial state plans in order to take over the implementation of a portion of a federal plan. For example, the states could replace the federal plan's allowance-distribution provisions with their own allowance-distribution provisions.

States operating under a federal plan would be allowed to adopt complementary measures outside of that plan to facilitate compliance and lower costs to the benefit of power generators and consumers.

Current Status/Next Steps

Q: What is the current status of the Clean Power Plan?

A: Although the CPP is a final rule and set a deadline of September 6, 2016, for each state to submit a State Implementation Plan to EPA,[118] EPA was unable to enforce that deadline because the rule was stayed, pursuant to Supreme Court order, for the duration of the litigation over the rule.[119] The U.S. Court of Appeals for the District of Columbia heard oral arguments in the case in September 2016, but agreed on April 28, 2017, to an EPA request to hold the case in abeyance while the agency conducts the review required by Executive Order 13783.[120]

On October 10, 2017, pursuant to that review, EPA proposed to repeal the CPP.[121] The proposed repeal is subject to public comment until January 16, 2018. Two days of public hearings on the proposal were held November 28 and 29, 2017, in Charleston, West Virginia. The court further extended the abeyance of the litigation while EPA proceeds to repeal the CPP.[122]

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[117] Ibid.

[118] As noted below in "Q: What happens if a state fails to submit an adequate plan by the appropriate deadline?," EPA cannot compel a state to submit a plan, but the statute authorizes EPA to impose a federal plan on the state if a state does not submit a satisfactory plan by EPA's deadline.

[119] See Order in Pending Case, West Virginia v. EPA (S. Ct. No. 15A773, February 9, 2016), available at https://www.supremecourt.gov/orders/courtorders/020916zr_21p3.pdf.

[120] Exec. Order No. 13783, § 4(b)(ii), 82 *Federal Register* 16093 (March 31, 2017) (signed on March 28, 2017).

[121] Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 *Fedister Register* 48035 (October 16, 2017).

[122] Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. November 9, 2017).

Q: What is the basis of EPA's proposed CPP repeal?

A: EPA proposed to repeal the Clean Power Plan based on a change in its legal interpretation of Section 111(d) of the Clean Air Act.[123] In its new interpretation, the agency maintains that the CPP exceeded the agency's 111(d) authority by requiring compliance through activities that are "outside the fence line" of the power plants whose emissions are the rule's targets. For example, the rule effectively assumes that electric power producers would reduce CO_2 emissions by substituting lower carbon or non-carbon sources of electricity for some of the fossil-fueled generation whose emissions it seeks to reduce. The lower carbon sources might be wind or solar power units located miles away from the coal-fired unit whose emissions are to be reduced. The proposed repeal states that such outside-the-fence-line measures are not authorized by Section 111; it maintains that the agency's historical practice has been to interpret the authority in Section 111 to allow only measures that can be applied "at and to an individual source" of pollution.[124]

Q: What are the next steps after the closing of the public comment period?

A: Following the public comment period, a repeal of the CPP could be promulgated. Like the *proposal* to repeal the CPP, the *promulgated* repeal would need to be accompanied by a statement of basis and purpose.[125] It would also require an explanation of the reasons for any major changes from the proposal. The promulgated repeal must also be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period. The promulgated repeal may not be based (in part or whole) on any information or data which has not been placed in the docket as of the date of promulgation.

Q: Would repeal of the CPP be subject to judicial review?

A: In the case of review of any action of the Administrator to which subsection 307(d) of the Clean Air Act applies, including repeal of a rule, the U.S. Court of Appeals for the D.C. Circuit may reverse any such action found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, or without observance of the procedures required by law, if the failure to observe such procedure is arbitrary or capricious.[126]

Q: Is EPA considering a replacement for the CPP?

A: Although the agency has proposed to repeal the Clean Power Plan, it did not propose repeal of the GHG "endangerment finding," the 2009 agency finding that emissions of CO_2 and other GHGs endanger public health and welfare.[127] Without addressing this finding, the agency appears to have a continuing obligation to limit emissions of CO_2 from power plants.[128] Thus, in addition

[123] 82 *Federal Register* at 48038-43. For additional discussion of EPA's legal reasoning, see CRS Legal Sidebar LSB10016, *EPA Proposes to Repeal the Clean Power Plan*, by Linda Tsang.

[124] For additional discussion of EPA's legal reasoning, see CRS Legal Sidebar LSB10016, *EPA Proposes to Repeal the Clean Power Plan*, by Linda Tsang.

[125] For additional information on the legal requirements to repeal a regulation, see CRS Report R41546, *A Brief Overview of Rulemaking and Judicial Review*, by Todd Garvey.

[126] 42 U.S.C. §7607(b), (d)(9).

[127] See EPA, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act," Final Rule, 74 *Federal Register* 66496, December 15, 2009. EPA's "endangerment finding" was upheld by the Supreme Court in *Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014).

[128] For additional information on EPA's obligation to regulate CO_2 emissions from power plants, see CRS Legal Sidebar LSB10016, *EPA Proposes to Repeal the Clean Power Plan*, by Linda Tsang.

to the proposed repeal of the CPP, on December 18, 2017, EPA issued an Advance Notice of Proposed Rulemaking (ANPRM) to solicit information on whether it is appropriate to issue another rule to replace the CPP and if so, in what form and scope.[129] EPA will take public comment on the notice for 60 days following its publication in the *Federal Register*.

Costs and Benefits of the Clean Power Plan

Q: What role did cost play in EPA's choice of emission standards?

A: Under Section 111(a)(1)'s definition of "standards of performance," EPA must consider cost in developing NSPSs and related emission guidelines for existing sources of pollution. Section 111(d)(1) also states that the regulations shall permit the states "to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies."

In addition, EPA is required by Executive Order 12866 to provide a cost-benefit analysis when it proposes or promulgates economically significant rules. The CPP is an economically significant rule and was therefore subject to the executive order. E.O. 12866 states that "in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach."[130]

The agency's 2015 RIA, which it prepared to comply with the executive order, is available on the agency's website.[131]

The proposed repeal of the CPP is also an economically significant rule subject to E.O. 12866. EPA prepared a new Regulatory Impact Analysis that summarizes the costs and benefits of repealing the rule.[132]

Q: What were EPA's estimates of the costs of the final rule?

A: The cost of the rule would depend on whether states adopt a rate-based or a mass-based approach to compliance, among other factors. In EPA's 2015 analysis, the cost associated with a mass-based approach is generally less than that of the rate-based: EPA estimated the annual incremental compliance cost for the *mass-based* approach to be $1.4 billion in 2020, $3.0 billion in 2025, and $5.1 billion in 2030. The comparable figures for the *rate-based* costs were $2.5 billion in 2020, $1.0 billion in 2025, and $8.4 billion in 2030. Because states would generally determine how to comply with the goals established by the final rule, EPA referred to these cost estimates as "illustrative" and noted that they "do not represent the full suite of compliance flexibilities states may ultimately pursue."[133] EPA described the cost estimates as including "the

[129] The ANPRM was released on December 18, 2017. A copy of the document and an EPA Fact Sheet can be found at https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-advance-notice-proposed.

[130] Executive Order 12866, "Regulatory Planning and Review," signed September 30, 1993, at https://www.archives.gov/files/federal-register/executive-orders/pdf/12866.pdf.

[131] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Clean Power Plan Final Rule*, October 23, 2015, at https://www.regulations.gov/document?D=EPA-HQ-OAR-2013-0602-37105.

[132] U.S. EPA, *Regulatory Impact Analysis for the Review of the Clean Power Plan: Proposal*, October 2017 (hereinafter, "2017 RIA"), at https://www.epa.gov/sites/production/files/2017-10/documents/ria_proposed-cpp-repeal_2017-10_0.pdf.

[133] 2015 RIA, p. ES-9.

net change in the annualized cost of capital investment in new generating sources and heat rate improvements at coal-fired steam-generating units, the change in the ongoing costs of operating pollution controls, shifts between or amongst various fuels, demand-side energy efficiency measures, and other actions associated with compliance."[134]

Q: What other estimates of the Clean Power Plan's cost are there?

A: On November 9, 2015, the American Coalition for Clean Coal Electricity, an industry group, released a study of the CPP's impacts prepared by NERA Economic Consulting. The study concluded that the annual cost of compliance would range from $29 billion to $39 billion in the period 2022-2033 and that 40 states would see average electricity price increases of 10% or more under at least one of the scenarios it modeled.[135] A study released by the National Mining Association projected sharp increases in the cost of both electricity and natural gas as a result of the rule, with a cumulative increase in wholesale electricity costs of $214 billion between 2022 and 2030.[136]

Others, including electric power producers and regional transmission organizations, have argued that it is too early to arrive at cost estimates.[137] Much would depend on decisions to be made by the states as to how they would structure their regulatory programs and on projections of the cost of natural gas, coal, renewable power, and end-use efficiency measures between now and 2030.

As noted below, EPA has revised its estimates of the costs and benefits of the rule in the RIA that accompanies the proposed repeal.

Q: What were the benefits EPA estimated for the Clean Power Plan?

A: In the preamble to the final rule, EPA cited monetized climate benefits of the rule to be $20 billion in 2030 and the air pollution health co-benefits of the rule to be an additional $12 billion to $34 billion (all estimates in 2011 dollars).[138] The agency used global estimates of the social cost of carbon (SCC)[139] to estimate the value of climate benefits expected under the CPP. The SCC is

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[134] 2015 RIA, p. ES-9.

[135] NERA Economic Consulting, *Energy and Consumer Impacts of EPA's Clean Power Plan*, prepared for the American Coalition for Clean Coal Electricity, November 7, 2015, http://www.americaspower.org/wp-content/uploads/2015/11/NERA-CPP-Final-Nov-7.pdf.

[136] Energy Ventures Analysis, *EPA's Clean Power Plan: An Economic Impact Analysis*, prepared for the National Mining Association, November 17, 2015, http://nma.org/index.php/press-releases-2013/2376-clean-power-plan-will-add-214-billion-to-wholesale-electricity-prices.

[137] See, for example, ClimateWire, "Experts Say Accurate Clean Power Plan Cost Estimate Won't Arrive for Years," November 30, 2015. The article cites officials at the two largest regional transmission organizations, PJM Interconnection and Midcontinent Independent System Operator, among others.

[138] Each of these estimates used a 3% discount rate (EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64680-64681, October 23, 2015). Discount rates reflect the preference of most people to have money now rather than in the future. Thus, they discount the value of future benefits derived from the rule. Besides the 3% discount rate, EPA estimated the climate benefits using three other discount rates: 2.5%, 5%, and "the 95th percentile at a 3% discount rate." Estimates of the climate benefits ranged from $6.4 billion to $61 billion in 2030, depending on which of these discount rates was used (80 *Federal Register* 64934).

[139] Estimates were developed by an interagency working group. See Interagency Working Group on Social Cost of Carbon, with participation by Council of Economic Advisers, Council on Environmental Quality, Department of Agriculture, Department of Commerce, Department of Energy, Department of Transportation, Domestic Policy Council, Environmental Protection Agency, National Economic Council, Office of Management and Budget, Office of Science and Technology Policy, and Department of the Treasury, "Technical Support Document: Technical Update of

an estimate of the monetary value of impacts from CO_2 emission changes, including net changes in agricultural productivity and human health, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning. The SCC estimates that EPA used in its analysis of the CPP final rule have since been withdrawn by E.O. 13783.[140] As noted below, in proposing to repeal the CPP, EPA has developed a set of new SCC values that resulted in notably different estimates of the monetary value of changes in CO_2 emissions.

The air pollution health co-benefits of the CPP reflect reduced exposure to fine particulate matter ($PM_{2.5}$) and ozone. The health co-benefit estimate was expressed as a range. The range primarily reflected the use of concentration-response functions from different epidemiology studies.[141] Health benefits reflected monetized estimates for the contiguous United States, not the rest of the world. A reduction in premature fatalities each year accounted for over 98% of the total monetized health co-benefits in the 2015 RIA.

With estimated compliance costs rising to a maximum of $8.4 billion in 2030, EPA's 2015 RIA expected that the CPP would yield *net* benefits of $24 billion to $49 billion in 2030.[142]

EPA did not monetize other expected co-benefits of this rule in the 2015 RIA, including reduced morbidity from exposure to nitrogen dioxide, sulfur dioxide, and methylmercury and reduced effects from acid deposition. EPA also did not quantify pollution effects on ecosystems or visibility.[143]

Q: What are the estimated costs and benefits of the proposed repeal of the CPP?

A: Broadly speaking, the benefits of repealing a rulemaking are avoiding the costs that would have been incurred through implementing the rule; the costs of the repeal are forgoing the benefits that would have resulted from rule implementation. EPA defined the benefits of the proposed CPP repeal as the "avoided compliance costs" (i.e., the compliance costs that would have been incurred to implement the CPP); EPA also refers to this category as "cost savings." Likewise, EPA defined the costs of the proposed CPP repeal as the forgone reductions in CO_2 and non-GHG emissions and the associated forgone climate benefits and health co-benefits, respectively.

EPA estimated the benefits and costs of the proposed repeal based on the power sector modeling it conducted in 2015 and under the same illustrative scenarios—mass-based and rate-based—but applied several methodological changes. These modifications include the application of new estimates of the social cost of carbon, changing the accounting treatment of demand-side energy efficiency savings, and using thresholds to exclude portions of the forgone health co-benefits from the benefit-cost comparison. Based on this approach, EPA reported benefits of the proposed

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the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866," May 2013, (revised July 2015), https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf.

[140] For additional information on the SCC and issues following the withdrawal, see CRS In Focus IF10625, *Social Costs of Carbon/Greenhouse Gases: Issues for Congress*, by Jane A. Leggett.

[141] To a lesser extent, it reflected the overlapping benefit ranges that EPA estimated for rate-based and mass-based compliance approaches. The mass-based estimate ranged from $12 billion to $28 billion in 2030; the rate-based benefit estimate ranged from $14 billion to $34 billion.

[142] Using the full range of benefits and costs reported in the 2015 RIA, assuming a 3% discount rate.

[143] A list of quantified and unquantified benefits of the rule is provided in the 2015 RIA, pp. ES12 to ES-14, at https://www.regulations.gov/document?D=EPA-HQ-OAR-2013-0602-37105.

repeal in the year 2030 under the mass-based scenario ranging from about $25 billion to $31 billion and costs of the proposed repeal in 2030 ranging from approximately $20 billion to $50 billion.[144] The comparable figures for the rate-based scenario in 2030 were benefits ranging from about $27 billion to $33 billion and costs ranging from approximately $19 billion to $56 billion. EPA broke out the benefits and costs in several ways that resulted in qualitatively different conclusions. Roughly two-thirds of the comparisons in the primary analysis showed net benefits of the proposed repeal and roughly one-third of the comparisons in the primary analysis showed net costs of the repeal. (See the next question for a more detailed discussion.)

Notably, these estimates do not reflect changes that have occurred in the power sector since 2015, such as changes in expected electricity demand, expected growth in electricity generation by renewable methods, retirement of older generating units, changes in the prices and availability of different fuels, and state and federal regulations.[145] Such changes may have implications for the projected emissions baseline and therefore for the benefits and costs of the CPP. EPA committed to updating the power sector modeling and publishing updated benefit and cost estimates based on this analysis before it finalizes the proposed repeal.[146]

In the meantime, EPA also estimated the benefits and costs of the proposed repeal using the more recent power sector projections in the Annual Energy Outlook (AEO), which is developed by the U.S. Energy Information Administration. EPA observed that baseline CO_2 emissions (i.e., CO_2 emissions without the CPP) have been lower in each AEO projection released since EPA conducted the 2015 CPP analysis. EPA used the AEO 2017 projections of CO_2 emissions in scenarios with and without the CPP to estimate the forgone reductions in CO_2 emission and non-GHG emissions and the associated forgone benefits and avoided compliance costs. This analysis suggested that using a more recent emissions baseline would result in lower estimates of the emission reductions expected from the CPP, thereby lowering the estimated compliance costs and benefits. EPA emphasized, however, that the estimates it developed using AEO 2017 are not directly comparable to EPA's 2015 estimates because the accounting treatments of demand-side energy efficiency programs differs.

Q: How do the conclusions of EPA's 2017 benefit-cost analysis compare to those from the 2015 analysis?

A: EPA's 2015 analysis of the CPP concluded that monetized benefits outweighed the monetized costs (i.e., resulted in net benefits) under the illustrative scenarios considered. All of the benefit-cost comparisons presented in the 2015 analysis showed positive net benefits on the order of billions of dollars. EPA's comparisons of the benefits and costs to repeal the CPP, however, offer mixed results, with roughly two-thirds of the benefit-cost comparisons showing net benefits of the proposed repeal and roughly one-third of the comparisons showing net costs of the repeal.[147]

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[144] These estimates are not a true range in part because they are based on different discount rates. These figures are the lowest and highest monetized estimates presented in the primary benefit-cost comparison for each scenario in the year 2030. The estimates span two discount rates (3% and 7%) and varying levels of forgone health co-benefits. EPA also presents estimates for the years 2020 and 2025.

[145] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for Review of the Clean Power Plan: Proposal*, October 2017, at https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/regulatory-impact-analysis-review-clean-power. See p. 17.

[146] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for Review of the Clean Power Plan: Proposal*, October 2017, at https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/regulatory-impact-analysis-review-clean-power. See p. 3.

[147] Based on the comparisons in Tables 4-1 through 4-4 of the 2017 Regulatory Impact Analysis, which are based on

EPA compared the monetized benefits and costs of the proposed repeal using four different tallies that showed qualitatively different conclusions. The only variable across the four tallies was the level of forgone health co-benefits considered; the estimates of the avoided compliance costs, forgone climate benefits, and forgone energy efficiency savings did not vary. The first tally compared avoided compliance costs to the forgone domestic climate benefits and forgone energy efficiency savings; it did not include any of the forgone health co-benefits. The second tally compared avoided compliance costs to forgone domestic climate benefits, forgone energy efficiency savings, and the forgone health co-benefits. The third and fourth tallies made the same comparison as the second except they each applied a threshold to the forgone health co-benefits, counting only the forgone health co-benefits that exceeded the defined threshold. Specifically, EPA assumed in the third tally that forgone health co-benefits related to particulate matter reductions fell to zero below the lowest measured level (LML) of each long-term particulate matter mortality study; EPA therefore only counted the forgone health co-benefits exceeding the LML. The threshold applied in the fourth tally assumed that health co-benefits related to particulate matter reductions fell to zero below the fine particulate matter National Ambient Air Quality Standard.

The first tally provided the most favorable benefit-cost comparison for the proposed repeal as nearly all of the scenarios show the monetized benefits of the proposed repeal exceeding the monetized costs of the repeal. The fourth tally also provided a generally favorable benefit-cost comparison, with most of its scenarios showing net benefits of the repeal. The second and third tallies showed the least favorable benefit-cost comparison for the proposed repeal, with nearly half of the scenarios in each tally showing net costs of the proposed repeal.

Q: What accounts for the differences in EPA's 2017 cost and benefit estimates as compared to the 2015 RIA's estimates?

A: EPA's 2017 analysis presented some different conclusions about the benefits and costs of the CPP relative to its 2015 analysis. One reason for the difference in qualitative conclusions is that some of the benefit-cost comparisons in EPA's 2017 analysis excluded portions of the estimated health co-benefits. For example, one of the benefit-cost comparisons excluded the forgone health co-benefits entirely to focus on the forgone benefits from the "targeted pollutant," CO_2. In two of the other benefit-cost comparisons, EPA applied a threshold to the forgone health co-benefits, counting only the forgone health co-benefits that exceeded a defined threshold for ambient particulate matter concentration. That is, EPA assumed that health co-benefits would equal zero for any particulate matter reductions beyond a threshold. The Agency established one threshold on the "lowest measured level" of long-term particulate matter from two studies on mortality related to particulate matter. EPA based the second threshold on the current federal air quality standard for fine particulate matter.

In addition, EPA's estimates of forgone climate benefits under the proposed repeal were lower than the climate benefits it estimated in the 2015 CPP analysis due to changes it made to the social cost of carbon (SCC). The SCC is an estimate of the monetary value of impacts from CO_2 emission changes, including net changes in agricultural productivity and human health, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning. In 2015, EPA used estimates of the SCC[148] to

EPA's 2015 power sector modeling. It does not include the observations that EPA presented about AEO 2017 because they are not comparable to EPA's estimates.

[148] Estimates were developed by an interagency working group. See Interagency Working Group on Social Cost of

estimate the global value of climate benefits expected from domestic CO_2 reductions under the CPP. The SCC estimates, however, have since been withdrawn by E.O. 13783.[149] EPA therefore developed new SCC values under E.O. 13783, which highlighted consideration of domestic measures of the SCC as well as the OMB guidance on selection of discount rates. EPA's new SCC estimates are domestic measures of the social cost of carbon—i.e., estimates of the "direct impacts of climate change that are anticipated to occur within U.S. borders"—and are discounted at rates of 3% and 7%.[150] The domestic perspective and use of a 7% rate in particular contributed to lower estimates relative to the estimates used in 2015. EPA characterized the new SCC estimates as "interim values ... for use in regulatory analyses until an improved estimate of the impacts of climate change to the U.S. can be developed based on the best available science and economics" but did not give a timeline for updates.[151] EPA also presented sensitivity analyses using global measures of the SCC and alternative discount rates but did not directly compare those estimates to the avoided compliance costs of the proposed repeal.

Finally, EPA changed the accounting treatment of demand-side energy efficiency savings but this did not alter the qualitative conclusions of the benefit-cost analysis. EPA's 2015 analysis treated savings from energy efficiency measures as a negative cost whereas the 2017 analysis treated the energy efficiency savings as a positive benefit.[152] That is, EPA broke out the energy efficiency savings from the compliance cost tally presented in the 2015 analysis and moved energy efficiency savings to the tally of forgone benefits in the 2017 analysis. This meant that the avoided compliance cost tally increased by the same amount that the forgone benefits tally increased and therefore there was no change in the comparison of benefits and costs.

Potential Impacts on the Electricity Sector

Q: How might the Clean Power Plan impact electricity prices and electricity bills?

A: In the 2015 RIA, EPA estimated that the *national average retail electricity price* in the contiguous United States would increase by less than 1% in both 2025 and 2030 compared to EPA's baseline scenario.[153] However, EPA's analysis indicated the electricity price changes

Carbon, with participation by Council of Economic Advisers, Council on Environmental Quality, Department of Agriculture, Department of Commerce, Department of Energy, Department of Transportation, Domestic Policy Council, Environmental Protection Agency, National Economic Council, Office of Management and Budget, Office of Science and Technology Policy, and Department of the Treasury, "Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866," May 2013 (revised July 2015), https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf.

[149] For additional information on the SCC and issues following the withdrawal, see CRS In Focus IF10625, *Social Costs of Carbon/Greenhouse Gases: Issues for Congress*, by Jane A. Leggett.

[150] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for Review of the Clean Power Plan: Proposal*, October 2017, at https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/regulatory-impact-analysis-review-clean-power. See p. 5.

[151] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for Review of the Clean Power Plan: Proposal*, October 2017, at https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/regulatory-impact-analysis-review-clean-power. See p. 42.

[152] 2015 RIA, p. ES-9.

[153] 2015 RIA, p. 3-35 and Tables 3-20 and 3-21.

would vary by region, ranging from a 5.9% increase (Wisconsin/Michigan region) to a 9% decrease (Long Island region) in 2030 compared to the baseline scenario.[154]

By comparison, EPA estimated that the *average monthly residential electricity bill* would decline by 7.0%-7.7% in 2030 (compared to a baseline scenario) as consumption of electricity declines due to efficiency measures.[155] (EPA's analysis did not provide a regional breakout for electricity bill impacts.) Although the final rule did not include energy efficiency activities in the state target calculations,[156] energy efficiency plays a substantial role in EPA's 2015 RIA.

Q: How did the Clean Power Plan address electricity reliability?

A: EPA's proposed CPP rule generated substantial interest in the potential effects of the rule on the reliability of electric power supply. EPA asserted that it did not want compliance with the final rule to interfere with industry's ability to maintain the reliability of the nation's electricity supply. EPA's final CPP rule addressed electric system reliability in several ways.

In particular, the final rule contained a provision for a reliability "safety valve" for individual power plants. EPA stated that there may be a need for an EGU to continue to operate and release "excess emissions" if an emergency situation arises that could compromise electric system reliability. The reliability safety valve would allow for a 90-day reprieve from CO_2 emissions limits. EPA stated that the safety valve could be triggered only in an emergency situation. For example, extreme weather events are "of short duration and would not require major—if any—adjustments to emission standards for affected EGUs or to state plans."[157]

EPA also implemented a formal memorandum of joint understanding on maintaining electric system reliability with the Department of Energy and the Federal Energy Regulatory Commission so as to coordinate efforts while the state compliance plans are developed and implemented. The memorandum expresses the joint understanding of how the agencies will cooperate, share information, monitor states' progress and implementation of the rule, and resolve difficulties that may be encountered.[158]

Q: What types of electricity sector infrastructure changes might result from the Clean Power Plan?

A: Although the CPP would not directly require infrastructure changes in the electricity sector, states might need to modify or expand existing infrastructure to meet their emission or emission rate targets. For example, increased use of existing NGCC capacity might require upgraded transmission facilities and potentially new natural gas infrastructure to provide fuel. Projected increases in renewable generation would likely require new transmission lines: it can take anywhere from 3 to 10 years to get the federal, state, and local permits in place to build a major electric transmission line.[159] If additional transmission capacity is required, planning would likely need to begin soon to get new lines in place for when they would be needed in the early 2020s.

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[154] 2015 RIA, Table 3-21.

[155] 2015 RIA, p. 3-40.

[156] See above, "Q: What role does energy efficiency play in EPA's final rule?"

[157] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64878, October 23, 2015.

[158] *EPA-DOE-FERC Coordination on Implementation of the Clean Power Plan*, August 2015, http://www.ferc.gov/media/headlines/2015/CPP-EPA-DOE-FERC.pdf.

[159] For further discussion, see CRS Report R44265, *EPA's Clean Power Plan: Implications for the Electric Power*

Reconsidering the Rule

Q. What was required by President Trump's Executive Order 13783?

A. E.O. 13783, which was signed by President Trump on March 28, 2017, required reviews of all agency actions "that potentially burden the development of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources."[160] The order addresses specific CAA regulations, including the CPP for existing fossil-fueled electric generating units (EGUs) and two proposed rules related to it, the New Source Performance Standards (NSPSs) for new and modified EGUs, and the NSPSs for the Oil and Natural Gas Sector. Each of these rules would control GHG emissions from an energy-producing sector. The E.O. directed EPA to review these rules "for consistency with the policy set forth in section 1 of this order," and, if appropriate, to "suspend, revise, or rescind" them.

Section 1 lists many goals, including to

- "promote clean and safe development of our nation's vast energy resources,"
- "ensure that the Nation's electricity is affordable, reliable, safe, secure, and clean,"
- "take appropriate actions to promote clean air and clean water," and
- ensure that "necessary and appropriate environmental regulations comply with the law, are of greater benefit than cost, when permissible, achieve environmental improvements for the American people, and … employ the best-available peer-reviewed science and economics."

EPA has initiated its review of the CPP and the NSPSs for new and modified EGUs;[161] on October 10, 2017, it proposed to repeal the CPP. The proposed repeal is subject to public comment until January 16, 2018. Two days of public hearings on the proposal were held on November 28 and 29, 2017, in Charleston, WV.

Q. What is the process for suspending, revising, or repealing the Clean Power Plan?

A. As the result of a stay issued by the Supreme Court in February 2016, implementation of the CPP is already suspended pending the resolution of judicial challenges. As discussed in the "Judicial Review" section of this report, the U.S. Court of Appeals for the District of Columbia (D.C. Circuit) heard oral argument in a case challenging the rule, *State of West Virginia v. EPA,*[162] in September 2016, but has yet to issue an opinion. In April 2017, EPA requested that the D.C. Circuit put the legal challenge to the rule in abeyance for 60 days while the agency considers the

Sector, by Richard J. Campbell.

[160] Executive Order 13783, "Promoting Energy Independence and Economic Growth," March 28, 2017, Section 2. For further discussion, see CRS Legal Sidebar WSLG1789, *New Executive Order Directs Agencies to Revise or Rescind Climate Change Rules and Policies*, by Linda Tsang.

[161] EPA, "Review of the Clean Power Plan," 82 *Federal Register* 16329, April 4, 2017; EPA, "Review of the Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units," 82 *Federal Register* 16330, April 4, 2017.

[162] West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015).

next steps in the review of the rule mandated by E.O. 13783. The court further extended the abeyance of the litigation after EPA issued its proposal to repeal the CPP.[163]

Repealing the CPP, as proposed by EPA on October 10, is more complicated than suspending it. Repealing a promulgated rule requires the promulgating agency to go through the same steps as the original rulemaking, a process governed in this case by Section 307(d) of the Clean Air Act.[164] Under Section 307(d), repeal must first be proposed in the *Federal Register*, along with "a statement of its basis and purpose" and shall specify a period available for public comment. The statement of basis and purpose must include a summary of the factual data on which the proposal is based; the methodology used in obtaining the data and in analyzing the data; and the major legal interpretations and policy considerations underlying the proposal. (For a discussion of EPA's basis and purpose for repeal of the CPP, see above, "Q: What is the basis of EPA's proposed CPP repeal?")

The statement must also set forth or summarize any pertinent findings, recommendations, and comments by the Clean Air Scientific Advisory Committee and the National Academy of Sciences, and, if the proposal differs in any important respect from any of these recommendations, an explanation of the reasons for such differences.

Following proposal and public comment, a repeal of the rule may be promulgated. The promulgated repeal must also be accompanied by a statement of basis and purpose, and an explanation of the reasons for any major changes from the proposal. The promulgated repeal must also be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period. The promulgated repeal may not be based (in part or whole) on any information or data which has not been placed in the docket as of the date of promulgation.

In the case of review of any action of the Administrator to which subsection 307(d) applies, the D.C. Circuit may reverse any such action found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, or without observance of the procedures required by law, if the failure to observe such procedure is arbitrary or capricious.[165]

The CPP and the International Paris Agreement

Q: What would the CPP contribute to meeting the U.S. GHG mitigation pledge under the international Paris Agreement (PA)?

The CPP was one major element of President Obama's Climate Action Plan (CAP), a broad federal strategy announced in June 2013 to address human-induced climate change. The CAP, in turn, was part of the U.S. contribution to a global effort, embodied in the Paris Agreement (PA) to halt the increase of GHG concentrations in the atmosphere in order to hold the GHG-induced increase of global temperature below 2ºCelsius or less.

There is broad agreement that effectively halting the rise in GHG concentrations would require GHG emissions mitigation by all major emitting countries. The United States historically was the leading GHG emitter until around 2007, when China surpassed it. In 2013, the United States

[163] Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. November 9, 2017).

[164] 42 U.S.C. §7607.

[165] 42 U.S.C. §7607(b), (d)(9).

emitted approximately 13% of net human-related GHG emissions, second to China, at approximately 24%.

President Obama pledged in 2015 that the United States would reduce its GHG emissions to 26-28% below 2005 levels by 2025.[166] The status of that U.S. pledge is now in flux. On June 1, 2017, President Trump announced that the United States would withdraw from the Paris Agreement. The timing, method, and specifics of this action are unclear. A White House official reportedly stated that the United States will follow the four-year legal procedure for withdrawal outlined in Article 28 of the PA: The United States may submit its written intent to withdraw three years after the treaty entered into force for the United States, on November 4, 2016. Withdrawal may take effect one year later—on or after November 4, 2020. In the meantime, the United States remains a Party to the PA (unless, following customary international law, the other Parties agree to allow an earlier exit). The Administration did not indicate whether and how the United States may participate in PA procedures until withdrawal is complete; one question is whether the United States will formally withdraw its NDC prior to withdrawal from the PA.

At least 165 GHG pledges have been submitted, covering almost 190 countries, including all major emitters. The PA has 148 Parties—governments that have legally ratified or accepted the agreement—out of 195 Signatories. Of the top 20 emitting nations, only Iran and Russia are not Parties.

Though submitting a pledge is mandatory for all countries that are party to the international Paris Agreement (PA),[167] including the United States, the quantitative GHG target is not legally binding. The U.S. submission is now recorded in the PA's registry as the U.S. Nationally Determined Contribution (NDC). President Obama's CAP, along with projected economic and technological developments, was expected to achieve most of the GHG reductions necessary to meet the U.S. NDC target, but further policy actions would likely have been required.

EPA estimated that the electricity sector's CO_2 emissions would decrease by 28% from 2005 to 2025 (the target year for the U.S. NDC) under the CPP and certain assumptions; this would be approximately 11-12% below EPA's baseline projection for affected EGUs (i.e., without the CPP). The 680-709 million metric tons (Mt)[168,169] of CO_2 reductions projected from the electricity sector under a scenario that includes the CPP were estimated to constitute 36-37% of the 1901 Mt net reduction that would achieve a 26% reduction below the 2005 level—the minimum U.S. target.[170]

Other organizations used models to compare baseline scenarios with various CPP scenarios. **Table 5** lists the CO_2 emission projections from these groups with EPA's 2015 RIA estimate. Some of these groups produced multiple projections, employing different assumptions of future

[166] This is not the first U.S. quantitative GHG emission reduction pledge. President George W. Bush made the first commitment to a GHG target, on February 4, 2002, to reduce U.S. GHG emissions per unit of Gross Domestic Product by 18 by 2012. President Obama pledged in 2009 to reduce emissions "in the range of 17%" by 2012.

[167] For more information on the UNFCCC, the Kyoto Protocol, and the Paris Agreement, see CRS Report R44609, *Climate Change: Frequently Asked Questions About the 2015 Paris Agreement*, by Jane A. Leggett and Richard K. Lattanzio.

[168] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Clean Power Plan Final Rule*, October 23, 2015, at https://www.regulations.gov/document?D=EPA-HQ-OAR-2013-0602-37105. p. 3-19.

[169] CRS converted the 750-782 million short tons of reduction below the projected baseline in 2025, as cited in the 2015 RIA, to million metric tons, to be consistent with the pledge for the Paris Agreement.

[170] The electricity sector would contribute additional GHG reductions beyond the CPP due to other factors, including the switch from coal to natural gas and renewable energy for economic reasons, and ongoing efficiency improvements included in the baseline projection for the 2015 RIA.

activities: CPP implementation options (e.g., whether states engaged in emissions trading) and levels of energy efficiency improvements, among others.

In general, the modeling results in **Table 5** indicate that the CPP would have a substantial impact on future CO_2 emission levels from electricity generation compared to scenarios that do not include the CPP. All of the modeling scenarios below (except for EPA) included the December 2015 renewable energy tax extensions. On December 18, 2015, President Obama signed into law the Consolidated Appropriations Act, 2016 (P.L. 114-113). The act, among other provisions, extended and modified the production tax credit (PTC) and the investment tax credit (ITC) for specific renewable energy technologies.[171] Prior to the December 2015 development, the PTC had expired and the ITC was scheduled to expire at the end of 2016. The PTC will not be available to projects starting construction after December 31, 2019. However, PTC tax expenditures will continue after that date, because the PTC is available for the first 10 years of renewable electricity production. The ITC for solar is scheduled to decline from 30% to 26% in 2020, and 22% in 2021, before returning to the permanent rate of 10% after 2021.[172]

Table 5. Comparison of Selected Modeling Projections: CPP and Non-CPP Scenarios

Million Metric Tons of CO_2 Emissions

Modeling Group	Non-CPP Scenario: 2030 CO_2 Emissions	% Below 2005 Levels	CPP Scenario(s): 2030 CO_2 Emissions	% Below 2005 Levels
EPA (2015)	2,021	16%	1,644	32%
Energy Information Administration (2017)	1,886	22%	1,537	36%
Rhodium Group (2017)	1,774	26%	1,524	37%
M. J. Bradley and Associates (2016)	1,780-1,876	22%-26%	1,577-1,729	28%-34%
National Renewable Energy Laboratory (2016)	Not included	Not included	1,448–1,556	32%-36%

Source: EPA data from the agency's Power Sector Modeling, 2015, http://www.epa.gov/airmarkets/programs/ipm/cleanpowerplan.html; Energy Information Administration data from *Annual Energy Outlook 2017,* 2017, https://www.eia.gov/outlooks/aeo/. Rhodium Group data from "Taking Stock 2017: Adjusting Expectations for US GHG Emissions," 2017, http://rhg.com/reports/taking-stock-2017-adjusting-expectations-for-us-ghg-emissions; and personal correspondence with authors to provide 2030 estimate for CCP scenario. M. J. Bradley and Associates data from "EPA's Clean Power Plan Summary of IPM Modeling Results with ITC/PTC Extension," 2016, http://www.mjbradley.com/reports/updated-modeling-analysis-epas-clean-power-plan. National Renewable Energy Laboratory data from *Impacts of Federal Tax Credit Extensions on Renewable Deployment and Power Sector Emissions*, 2016, http://www.nrel.gov/docs/fy16osti/65571.pdf (and personal correspondence with report authors).

Notes: The groups in the table used different values for 2005 emission levels, but the differences were minimal. The percentage reductions in the table are based on the specific group's emission level in 2005.

[171] See National Renewable Energy Laboratory, *Impacts of Federal Tax Credit Extensions on Renewable Deployment and Power Sector Emissions*, February 2016, http://www.nrel.gov/docs/fy16osti/65571.pdf.

[172] For further information, see CRS Report R44852, *The Value of Energy Tax Incentives for Different Types of Energy Resources: In Brief*, by Molly F. Sherlock.

The CPP would continue to reduce CO_2 emissions beyond the U.S. target for 2025, into the next NDC to 2030 under the Paris Agreement. (Parties must submit subsequent NDCs at least every five years). Two factors that influence the effect of the CPP in 2025 are that (1) it will not have taken full effect by 2025, and (2) the baseline projections through the early 2020s are strongly influenced by federal tax incentives to promote renewable energy investments, which are counted in the baseline projections.

These estimates of the potential contribution of the CPP to meeting the U.S. GHG target for 2025 should not be considered precise for a number of reasons. There are uncertainties related to the "baseline" economic and policy circumstances, on which emissions projections are based. Uncertainties include other federal and state policies, rates of economic growth, relative fuel abundances and prices, technological advance, consumer and investor preferences, and other factors. There are also uncertainties, though generally thought to be smaller, regarding how states and affected private entities might implement the CPP.

Q: Can the United States meet its contribution under the Paris Agreement without the Clean Power Plan?

The United States would have been challenged to achieve its NDC GHG target under the Obama Climate Action Plan (CAP). The Clean Power Plan contributes but does not itself enable the United States to meet its NDC pledge. At the end of 2015, the United States provided an accounting of its expectations in its second biennial communication[173] to the international treaty body. It itemized actions, including the CPP, that the United States was implementing or intended that would assist in reducing U.S. GHG emissions. All identified U.S. actions, including the CPP, could reduce GHG emissions (net of removals by sinks) by 12-16% below 2005 levels by 2025, according to the U.S. communication. This would be well short of the U.S. NDC[174] target of 26-28% below the 2005. With additional policies under optimistic assumptions, several analyses indicated that the CAP could have met the U.S. pledge to reduce GHG emissions. More likely, additional measures would be required beyond the CAP.

New policies and actions of the Trump Administration could decrease the likelihood that the United States could meet the NDC target. As discussed above,[175] E.O. 13783 directed the Environmental Protection Agency (EPA) Administrator to review and, if appropriate, to suspend, revise, or rescind, "as appropriate and consistent with law," the CPP and other rules that "unduly burden the development or use of domestically produced energy resources beyond the degree necessary to protect the public interest or otherwise comply with the law." E.O. 13783 also withdrew President Obama's Climate Action Plan, along with other actions.

On June 8, 2017, EPA sent to the Office of Management and Budget a proposed rulemaking to rescind the CPP. Should the CPP be rescinded, it would further diminish the likelihood that the United States could meet its NDC GHG target. Achieving a Party's GHG emissions target is not a legal obligation, however, even if the United States does not withdraw from the accord.

Any projection of future emissions is contingent on assumptions about future economic, policy, and technological conditions. Strategies being undertaken by states and localities and many in the

[173] Department of State, *Second Biennial Communication of the United States of America Under the United Nations Framework Convention on Climate Change*, 2016.

[174] Having communicated the U.S. INDC to the UNFCCC Secretariat in 2015 before joining the PA, the United States is considered, in accordance with paragraph 22 of the Decision to give effect to the PA, to have satisfied the PA's requirement to submit a first NCD under PA Article 4.2. The Secretariat has now registered the U.S. NDC in the interim NDC Registry, in accordance with PA Article 4.12 and the Decision paragraph 30.

[175] See "Q. What was required by President Trump's Executive Order 13783?".

private sector could enhance emission reductions whether or not the CPP is implemented. Other federal policies, including incentives to deploy renewable energy, and to expand production of natural gas, may continue the historical trend away from coal-produced electricity. Rapid technological change in the energy sector may have an even greater influence. Policies of other countries to advance no-emitting electricity production may continue to reduce the costs of key technologies, including renewable energy and carbon capture and sequestration. While many analysts are skeptical that non-federal influences could reduce U.S. emissions to the NDC target, others believe that market, state and local, and philanthropic programs could achieve the 2025 target.

Congressional Actions

Q: Can Congress use the Congressional Review Act (CRA) to disapprove the rule?

A: The CRA provides a mechanism by which Congress may review and disapprove of agency rules through passage of a joint resolution that is eligible for expedited procedures in the Senate.[176] When passed by both houses of Congress, such a joint resolution is sent to the President for his signature or veto.[177]

The time to disapprove the CPP through the CRA's expedited procedures has expired. The EPA's final CPP rule for existing power plants was received in Congress on September 17, 2015,[178] and published in the *Federal Register* on October 23, 2015. Three CRA resolutions of disapproval were introduced following receipt by Congress: H.J.Res. 67, H.J.Res. 72, and S.J.Res. 24. The Senate resolution became eligible for discharge from committee under the CRA's expedited procedures on November 13, 2015. Thirty Senators signed a discharge petition, and the resolution was discharged from the Senate Committee on Environment and Public Works on November 16.[179] The Senate considered the resolution on the floor on November 17, 2015, and passed it by a vote of 52-46.[180]

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[176] 5 U.S.C. §§801-808.

[177] The CRA provides expedited procedures for consideration of a joint resolution disapproving a rule in both Senate committee and on the Senate floor. Any time after the expiration of a 20-calendar-day period—which begins after a final rule is received by Congress and published in the Federal Register—a Senate committee can be discharged from the further consideration of a CRA joint resolution disapproving the rule. This discharge occurs upon the filing on the Senate floor of a petition signed by at least 30 Senators. Once a CRA joint resolution of disapproval is reported or discharged from Senate committee, any Senator may make a non-debatable motion to proceed to consider the disapproval resolution. This motion to proceed requires a simple majority for adoption. If the motion to proceed is successful, the CRA disapproval resolution would be subject to up to 10 hours of debate and then voted upon. A non-debatable motion to limit debate below 10 hours is in order. No amendments are permitted. A CRA disapproval resolution requires a simple majority in order to pass. For additional information on the CRA, CRS Report R43992, The Congressional Review Act (CRA): Frequently Asked Questions, by Maeve P. Carey and Christopher M. Davis, and CRS In Focus IF10023, The Congressional Review Act (CRA), by Maeve P. Carey and Christopher M. Davis.

[178] The rule was received by the Senate on September 11, 2015, and referred to the Committee on Environment and Public Works on September 17, 2015. See *Congressional Record*, vol. 161 (September 17, 2015), p. S6807. The rule was received by the House on September 11, 2015. See *Congressional Record*, vol. 161 (September 17, 2015), p. H5977. For purposes of the act, a rule is considered to have been "received by Congress" on the later date of its receipt in the Office of the Speaker of the House or its referral to Senate committee.

[179] See *Congressional Record*, vol. 161 (November 16, 2015), p. S7965.

[180] U.S. Senate, Roll Call Votes, 114th Congress—1st Session, Vote Summary on the Joint Resolution (S.J.Res. 24),

On December 1, 2015, the House considered S.J.Res. 24, previously passed by the Senate, under procedures from a special rule reported by the Rules Committee and adopted by the House.[181] The resolution was passed in the House by a vote of 242-180.[182] President Obama vetoed the resolution on December 18, 2015.[183] Congress did not take action to override the presidential veto.

Q: What other steps might Congress take to replace, rescind, or modify the Clean Power Plan rule?

A: In addition to joint resolutions of disapproval under the CRA, Congress has considered freestanding legislation or legislation that amends the Clean Air Act in a targeted way to reduce GHG emissions. In the 114th Congress, the House passed H.R. 2042, which would have delayed the date on which the CPP's state implementation plans were to be submitted to EPA as well as the compliance date of GHG emission standards for EGUs by a period of time equal to the time required for completion of judicial review. The bill would also have allowed a state to opt out of compliance if the governor determined that the rule would have an adverse effect on ratepayers or have a significant adverse effect on the reliability of the state's electricity system.

S. 1324, as reported by the Senate Environment and Public Works Committee in the 114th Congress, contained similar provisions. In addition, it would have prohibited EPA from regulating under Section 111(d) any category of existing sources regulated under the hazardous air pollutant authorities of Section 112, which would include EGUs. It would also have revoked the NSPSs for EGUs promulgated under Section 111(b) and would have set additional requirements for any future EGU standards issued under that authority.

Neither bill was enacted.

Another option that Congress has considered was to place an amendment, or "rider," on EPA's appropriation bill to prevent funds from being used to implement the rule. Although riders were attached to appropriation bills as reported or passed by the House or Senate in the 114th Congress, none was enacted.

Appropriations measures could remain important to the debate over the CPP, however. As noted above in "Reconsidering the Rule," revising or revoking the CPP would itself take the form of a rulemaking, requiring EPA to undertake numerous analytical and procedural steps. Under the FY2018 EPA budget, resources would thus need to be available to support this rulemaking.

Judicial Review

Q: What parties have joined litigation over the final Clean Power Plan rule?

A: Parties began filing petitions in the U.S. Court of Appeals for the D.C. Circuit (D.C. Circuit) challenging the final CPP rule for CO_2 from existing power plants starting on the day the rule was

http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=114&session=1&vote=00306.

[181] H.Res. 539, 114th Cong. (providing for one hour of debate on S.J.Res. 24 and S.J.Res. 23 and waiving all points of order).

[182] Final Vote Results for Roll Call 650, S.J.Res. 24, http://clerk.house.gov/evs/2015/roll650.xml.

[183] White House, "Memorandum of Disapproval on S.J.Res. 24," press release, December 18, 2015, https://obamawhitehouse.archives.gov/the-press-office/2015/12/19/memorandum-disapproval-sj-res-24.

published in the *Federal Register*.[184] CAA Section 307(b) requires that such petitions for review must be filed in the D.C. Circuit within 60 days after the rule's publication in the *Federal Register*.[185] The deadline for petitions for review of the CPP rule was therefore December 22, 2015.

Parties that filed petitions challenging the CPP rule include 26 states. West Virginia and Texas spearheaded a coalition of 23 state petitioners in filing the lead case. Oklahoma, North Dakota, and Mississippi filed their own petitions.[186] For an overview of state positions in the CPP litigation, see **Figure 6**. Other petitioners challenging the rule include three labor unions, a number of rural electric cooperatives and an association representing them, more than two dozen industry and trade groups, several nonprofit public policy organizations, and more than two dozen fossil-fuel-related companies and local electric utilities. Other fossil-fuel-related companies have moved to intervene on behalf of the petitioners.[187] In all, more than a hundred parties filed more than three dozen petitions challenging the CPP. All of these petitions have been consolidated into one case, captioned *State of West Virginia v. EPA*.[188]

In addition, various *amici curiae* (non-party "friends of the court") have filed briefs on the merits in support of the petitions challenging the rule. These include briefs filed by the state of Nevada and by 34 Senators and 171 Representatives.[189]

[184] See docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015); EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, October 23, 2015.

[185] 42 U.S.C. §7607(b).

[186] See docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015). The state parties opposing the Clean Power Plan include West Virginia, Texas, Alabama, Arizona (Corporation Commission), Arkansas, Colorado, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana (Department of Environmental Quality), Michigan (Attorney General Bill Schuette), Mississippi, Missouri, Montana, Nebraska, New Jersey, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Utah, Wisconsin, and Wyoming.

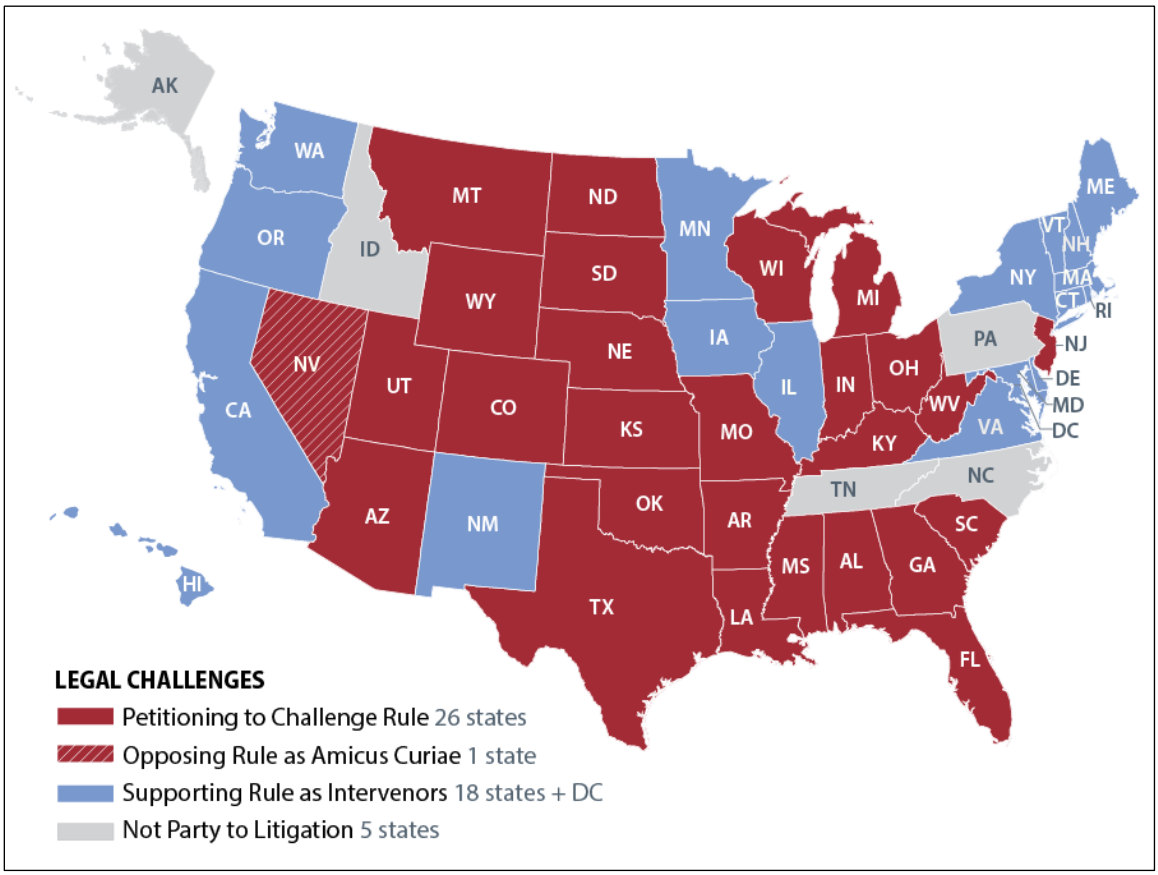
[187] Ibid. In addition, declarations and other exhibits have also been offered in opposition to the rule by various other organizations and individuals not participating as petitioners, intervenors, or amici. See ibid.

[188] Ibid.

[189] Ibid.

Figure 6.States Participating in Clean Power Plan Litigation

Consolidated Petitions: *West Virginia v. EPA*, D.C. Circuit No. 15-1363



Source: Prepared by CRS from litigation filings in *West Virginia v. EPA*.

Notes: The Clean Power Plan, as finalized, did not set emissions goals for Alaska, Hawaii, Vermont, or the District of Columbia (the latter two because there are no affected electric generating units in those locations). For more details, see above, "Q: Does the Clean Power Plan apply to all states and territories?"

Parties that have intervened in this case in support of EPA and its Administrator include a coalition of 18 states, the District of Columbia, five cities, and a county (including some in states that have filed petitions challenging the CPP).[190] Other parties intervening in support of the CPP include regional, state, and municipal utilities and power companies,[191] more than a dozen nonprofit organizations (including environmental organizations), and several energy industry associations.[192] Two former EPA Administrators are supporting the CPP as *amici curiae*: William Ruckelshaus, who headed the agency in 1970, when the CAA was enacted, and again in the 1980s; and William Reilly, the EPA Administrator at the time Congress passed the Clean Air Act

[190] See docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015). The state parties supporting EPA include New York, California (and its Air Resources Board), Connecticut, Delaware, Hawaii, Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota (via the Minnesota Pollution Control Agency), New Hampshire, New Mexico, Oregon, Rhode Island, Vermont, Virginia, and Washington. They are joined by city and local governments, including those of the District of Columbia; Broward County and South Miami, FL; Boulder, CO; Philadelphia, PA; Chicago, IL; and New York City, NY.

[191] Ibid. The cities of Austin, TX, and Seattle, WA, are participating through their municipally owned utilities.

[192] Ibid.

Amendments of 1990.[193] A coalition including 54 cities and localities is among the entities supporting the CPP as *amici curiae*.[194] An *amicus* brief was also filed in support of the CPP by 44 current and former Senators and 164 current and former Representatives.[195]

Five states are not party to the litigation: Alaska (for which EPA did not set a goal in the final rule),[196] Idaho, Pennsylvania, Tennessee, and North Carolina. North Carolina was initially one of the petitioners challenging the rule, but later asked to be removed.

Q: What is the status and time frame of litigation challenging the final Clean Power Plan rule, and will the rule remain in place while the litigation is pending?

The Supreme Court stayed the rule on February 9, 2016.[197] The stay pauses the rule's legal effect while the rule undergoes judicial review, and EPA may not enforce the rule during the stay.

During the Supreme Court's stay of the CPP rule, the full en banc court of the D.C. Circuit heard oral arguments in *West Virginia v. EPA* on September 27, 2016.[198] For oral argument, the court focused on five main areas: (1) statutory issues related to state authority and electricity generation shifts among affected power plants and renewable energy providers; (2) different amendments affecting CAA Sections 111(d) and 112; (3) constitutional issues; (4) notice issues; and (5) record-based issues.[199]

On April 28, 2017, the D.C. Circuit granted EPA's request to pause or hold in abeyance the CPP litigation for 60 days.[200] After EPA proposed to repeal the CPP, the court ordered that the case remain in abeyance for an additional 60 days and required EPA to submit status reports to the court regarding its process in repealing the rule every 30 days.[201]

Pausing the litigation has no effect on the CPP's implementation because the Supreme Court stayed the CPP pending the litigation's resolution. Specifically, the Supreme Court stayed the CPP "pending disposition of the applicants' petitions for review in the [D.C. Circuit] and

[193] Ibid.

[194] Ibid.

[195] Ibid.

[196] See EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, 64664, October 23, 2015: "Because the EPA does not possess all of the information or analytical tools needed to quantify the BSER for the two non-contiguous states with otherwise affected EGUs (Alaska and Hawaii) and the two U.S. territories with otherwise affected EGUs (Guam and Puerto Rico), these emission guidelines do not apply to those areas, and those areas will not be required to submit state plans on the schedule required by this final action."

[197] See Order in Pending Case, West Virginia v. EPA (S. Ct. No. 15A773, February 9, 2016), https://www.supremecourt.gov/orders/courtorders/020916zr_21p3.pdf. For further discussion of the stay, see CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt.

[198] The D.C. Circuit en banc court comprises 11 judges. See generally U.S. Court of Appeals, the District of Columbia Circuit, *Judges*, https://www.cadc.uscourts.gov/internet/home.nsf/Content/Judges. Two judges did not participate in the decision to hear the case en banc: Chief Judge Merrick Garland and Judge Nina Pillard. Order at 2, West Virginia v. EPA, No. 15-1363 (D.C. Cir. May 16, 2016). On September 22, 2016 (five days prior to oral argument), the court issued a notice that Judge Pillard would participate in hearing argument. Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. September 22, 2016).

[199] Order at 2-3, West Virginia v. EPA, No. 15-1363 (D.C. Cir. August 17, 2016).

[200] Order at 2, West Virginia v. EPA, No. 15-1363 (D.C. Cir. April 28, 2017).

[201] Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. November 9, 2017).

disposition of the applicants' petition for a writ of certiorari, if such writ is sought."[202] If the D.C. Circuit decides to continue to hold the litigation in abeyance during EPA's review, the CPP's implementation will remain stayed because the court has not resolved the litigation. The litigation could resume at a later date depending on EPA's actions or other issues that arise in the course of the agency's review.

Q: What legal arguments are being made for and against the final Clean Power Plan rule?

A: This report does not aim to provide a comprehensive preview of the legal arguments for or against EPA's CPP rule as the litigation proceeds. However, the bullet points below offer a few examples, drawn from litigation filings[203] and EPA documents, to illustrate the range of issues.

- Petitioners challenging the rule have argued that EPA lacks authority under CAA Section 111(d) to regulate CO_2 from power plants because power plants, as a source category, are already regulated for HAP under CAA Section 112.[204] As noted above, EPA has interpreted Section 111(d) as requiring regulation of CO_2 from existing power plants because CO_2 is not a HAP, and other conditions for regulation under Section 111(d) are met.[205]
- Petitioners have also challenged EPA's design of the CPP as exceeding EPA's scope of authority under Section 111(d).[206] They have argued, for example, that Section 111(d) authorizes EPA to require only measures that can be applied to an individual source's performance by the source's owner or operator ("inside the fence line"), such as adoption of pollution control devices or other design or operational standards.[207] Conversely, they say, it does not authorize what they characterize as a reorganization of the nation's electric grid or states' energy economies.[208] EPA has countered, in part, that "the phrase 'system of emission reduction' … is capacious enough to include actions taken by the owner/operator

[202] Order in Pending Case, West Virginia v. EPA (S. Ct. No. 15A773, Feb. 9, 2016), https://www.supremecourt.gov/orders/courtorders/020916zr_21p3.pdf.

[203] In particular, pursuant to the court's order dated November 30, 2015, petitioners submitted nonbinding statements of issues to be raised in the proceeding. See generally Statements of Issues filed by various Petitioners, docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015). Petitioners, intervenors in support of petitioners, and *amici curiae* opposing the rule submitted briefs on the merits in late February 2016, setting forth their arguments in more detail. See docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015). Response briefs on the merits from EPA, intervenors in support of EPA, and *amici curiae* supporting the rule are due in late March and early April 2016. Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. January 28, 2016). Replies are due April 15, 2016. Ibid.

[204] See, e.g., State Petitioners' Motion for Stay and for Expedited Consideration of Petition for Review at 11-15, West Virginia v. EPA, No. 15-1363 (D.C. Cir. filed October 23, 2015) (hereinafter "States' Motion for Stay").

[205] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, 64710-64715, October 23, 2015; Respondent EPA's Opposition to Motions to Stay Final Rule at 37-43, West Virginia v. EPA, No. 15-1363 (D.C. Cir. filed October 23, 2015) (hereinafter "EPA Opposition to Stay"); see also above, "Q: What does Section 111(d), the authority EPA cited for the Clean Power Plan, bar EPA from regulating?"

[206] See generally Statements of Issues filed by various Petitioners, docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015).

[207] See, e.g., States' Motion for Stay, at 6 (see footnote 204).

[208] See, for example, Coal Industry Motion for Stay, at 9-11, West Virginia v. EPA, No. 15-1363 (D.C. Cir. filed October 23, 2015); see also, for example, CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt.

of a stationary source designed to reduce emissions from that affected source, including actions that may occur off-site and actions that a third party takes pursuant to a commercial relationship with the owner/operator."[209]

- Various petitioners have challenged different technical or programmatic aspects of the rule as arbitrary, capricious, an abuse of agency discretion, or otherwise not in accordance with law pursuant to the judicial review provisions of Section 307 of the CAA.[210] EPA responded to numerous comments along these lines in its rule preamble, Response to Comments documents, and other technical support documents as well as in its response in opposition to the motions to stay.[211]
- The parties also debated the standards by which a court should evaluate EPA's interpretation and implementation of CAA Section 111.[212] Under *Chevron v. Natural Resources Defense Council, Inc.*, a court reviewing an agency rule defers to the agency's interpretation of a statute in cases where the statutory language is ambiguous, if the agency's interpretation is reasonable.[213] In the 2014 *Utility Air Regulatory Group v. EPA* decision, however, the Supreme Court opined that where a statutory interpretation by EPA "would bring about an enormous ... expansion in EPA's regulatory authority"—which some petitioners claim the CPP rule would do—a court should demand "clear congressional authorization."[214]
- Some petitioners have argued for CAA Section 111(d) to be interpreted more narrowly than EPA interprets it so as to avoid certain constitutional issues.[215] For example, states and other petitioners have argued that the CPP impermissibly invades traditional state police powers over the electrical grid and commandeers state legislatures.[216] EPA has previewed its responses to such arguments in its Response to Comments and other documents and in its response in opposition to

[209] EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64761, October 23, 2015. See also EPA Opposition to Stay, at 11-37 (see footnote 205).

[210] See generally Statements of Issues filed by various Petitioners, docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015) (raising issues such as the degree to which the rule allows states to consider the remaining useful life of existing sources, EPA's consideration of different coal types, availability of particular measures under the mass-based and rate-based approaches, and state-specific issues).

[211] See generally EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, October 23, 2015; EPA's Responses to Public Comments on the EPA's Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (August 2015), http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2013-0602-37106 (hereinafter "EPA RTC"); EPA Opposition to Stay (see footnote 205). Technical documents related to the CPP can be located in EPA-HQ-OAR-2013-0602 docket at regulations.gov.

[212] See, for example, States' Motion for Stay, at 6 (see footnote 204); Coal Industry Motion for Stay, at 9-11 (see footnote 208); EPA Opposition to Stay, at 27 (see footnote 205).

[213] Chevron vs. Natural Res. Def. Council, Inc., 467 U.S. 837, 842-843 (1984).

[214] Utility Air Regulatory Group v. EPA, 134 S. Ct. 2427, 2444 (2014).

[215] Intervenor Peabody Energy has stated that the CPP raises a number of issues under the U.S. Constitution. It has argued, for example, that the rule's relation to states raises federalism issues under the Tenth Amendment, that it amounts to agency lawmaking and raises separation of powers issues under Articles I and II, and that it raises just compensation issues under the Fifth Amendment. See Peabody Energy Corp.'s Motion for Stay, West Virginia v. EPA, No. 15-1363 (D.C. Cir. November 5, 2015).

[216] States' Motion for Stay, at 9 (see footnote 204); Oklahoma's Motion for Stay at 7-20, West Virginia v. EPA, No. 15-1363 (D.C. Cir. October 28, 2015); Statements of Issues filed by various Petitioners, docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015).

the motions to stay.[217] EPA calls the rule a "textbook example of cooperative federalism"[218] and argues that states can opt to do nothing, in which case the federal plan option imposes no new regulatory obligations on states.[219]

- Some challengers have disputed the adequacy of certain other procedural aspects of the issuance of the rule, alleging impermissible deviation from the proposed rule[220] or impermissible *ex parte* contacts.[221] Supporters of the rule assert that the final rule is a logical outgrowth of the proposal and comments and that EPA properly followed all other procedural requirements.[222]

Some of these issues were addressed during oral argument.[223]

Q: Will the proposed repeal affect the Clean Power Plan litigation?

A: On November 9, 2017, the D.C. Circuit ordered that the CPP litigation continue to be held in abeyance (i.e., paused temporarily) for 60 days from that date to allow EPA to reconsider the CPP.[224] Because the repeal of the CPP has not been finalized, it is difficult to predict the next steps for the litigation. The court could remand or continue to pause the litigation—actions that the court considered when it first issued the abeyance.[225] EPA recently filed a litigation report on the status of its reconsideration of the CPP, explaining that the court should continue to hold the case in abeyance until the repeal is finalized.[226] EPA could also seek to dismiss the case as moot once the repeal is final.[227]

Q: Might other litigation affect the final Clean Power Plan rule?

A: In addition to the direct legal challenge to the CPP rule for CO_2 from existing power plants, 25 states—led by North Dakota and West Virginia—have filed petitions challenging EPA's final NSPS rule for CO_2 from new, modified, or reconstructed power plants.[228] They have been joined

[217] See EPA RTC, at 193-194 (see footnote 211); EPA Opposition to Stay, at 43-50 (see footnote 205).

[218] EPA Opposition to Stay, at 44 (see footnote 205).

[219] Ibid. at 46-47; see also, for example, State Intervenors' Opposition to Petitioners' Motions for a Stay at 2-11, West Virginia v. EPA, No. 15-1363 (D.C. Cir. December 8, 2015).

[220] North Dakota's Motion for Stay at 18-19, West Virginia v. EPA, No. 15-1363 (D.C. Cir. filed October 29, 2015); generally Statements of Issues filed by various Petitioners, docket for West Virginia v. EPA, No. 15-1363 (D.C. Cir. docketed October 23, 2015).

[221] Energy & Environment Legal Institute Petitioners' Response in Support of Motions to Stay, West Virginia, et al. v. EPA, No. 15-1363 (D.C. Cir. filed November 5, 2015).

[222] See, for example, EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64840-64850, October 23, 2015; EPA Opposition to Stay, at 62-63 (see footnote 205).

[223] For additional information on the CPP oral argument, see CRS Report R44480, *Clean Power Plan: Legal Background and Pending Litigation in West Virginia v. EPA*, by Linda Tsang and Alexandra M. Wyatt.

[224] Order, West Virginia v. EPA, No. 15-1363 (D.C. Cir. November 9, 2017).

[225] Order at 2, West Virginia v. EPA, No. 15-1363 (D.C. Cir. April 28, 2017). For additional information on the CPP abeyance, see CRS Legal Sidebar WSLG1797, *Update: D.C. Circuit Pauses the Clean Power Plan Litigation*, by Linda Tsang.

[226] EPA Status Report, West Virginia v. EPA, No. 15-1363 (D.C. Cir. October 10, 2017).

[227] Cogan Schneier, "EPA Moves to Kill Clean Power Plan as Lawsuit Languishes in DC Circuit," *National Law Journal* (October 10. 2010), https://www.law.com/nationallawjournal/sites/nationallawjournal/2017/10/10/epa-moves-to-kill-clean-power-plan-as-lawsuit-languishes-in-dc-circuit/?slreturn=20171020162831.

[228] See generally docket for North Dakota v. EPA, No. 15-1381 (D.C. Cir. filed October 23, 2015). Colorado and New

by other petitioners including a labor union, a rural electric cooperatives association, several other fossil-fuel-related companies and utilities, and several industry and trade groups. Most of the states and a number of the nonprofit organizations that intervened in support of the CPP case also intervened in the NSPS challenge in support of EPA.[229] As noted above, the finalization of NSPS for new air pollutant sources under Section 111(b) of the CAA is a prerequisite for the use of authority under Section 111(d) to regulate existing sources, so this litigation could threaten EPA's basis for the CPP.

On March 30, 2017, the D.C. Circuit canceled the April 17 oral argument for the case[230] and on April 28, 2017, the D.C. Circuit granted EPA's request to pause or hold in abeyance the litigation challenging the NSPS rule.[231] On August 10, 2017, the court further extended the abeyance until further order of the court and directed EPA to file status reports at 90-day intervals beginning October 27, 2017.[232]

For Further Information

Q: Who are the CRS contacts for questions regarding this rule?

A: CRS analysts, listed below, cover areas related to the proposed rule.

Area of Expertise	Name
Clean Air Act	Jim McCarthy
Legal issues	Linda Tsang
Climate change	Jane Leggett
State GHG emission programs	Jonathan Ramseur
Costs and benefits	Kate Shouse
Regulatory process	Maeve Carey
Carbon capture and sequestration	Pete Folger
Electric utilities	Richard Campbell
Biomass/Bioenergy	Kelsi Bracmort

Jersey did not join the coalition of states challenging the NSPS rule.

[229] Ibid.

[230] Order, North Dakota v. EPA, No. 15-1381 (D.C. Cir. March 30, 2017).

[231] Order at 2, North Dakota v. EPA, No. 15-1381 (D.C. Cir. April 28, 2017).

[232] Per Curium Order, North Dakota v. EPA, No. 15-1381 (D.C. Cir. Aug. 10, 2017).

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