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# Reconsidering the Clean Power Plan

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# Summary

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. Because power plant $CO_2$ emissions account for about 30% of total U.S. anthropogenic emissions of greenhouse gases (GHGs), the CPP has been seen as the most important U.S. regulation addressing climate change.

The CPP has not gone into effect: In February 2016, the U.S. Supreme Court stayed its implementation pending the completion of judicial review. Even had it not been stayed, the rule's limits on $CO_2$ emissions were not scheduled to begin taking effect until 2022. The Court's action delayed various planning requirements that would have determined how states intended to structure compliance with the rule's overall objectives.

Unlike the suspension of the CPP that is currently in place due to the Supreme Court's stay, repealing a promulgated rule requires that the promulgating agency go through the same steps as the original rulemaking, a process governed in this case by Section 307(d) of the Clean Air Act. The first step in the repeal process is a 60-day comment period following publication of the proposed repeal in the *Federal Register*. Ultimately, EPA will need to address all significant comments and criticisms that it receives during the public comment period when it promulgates a final decision on the proposed repeal. The agency's decision could then be subject to judicial review.

Although the agency 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, the agency 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 prepared and sent for interagency review 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.

The net effect of EPA's repeal and the ANPRM may be a continuing period of regulatory uncertainty for the states and industry. In the meantime, the electric power industry is changing rapidly as a result of several factors, including market forces, state and federal regulations, technological innovation, and federal tax incentives. Many coal-fired power plants are being retired, and the new electric generation replacing those plants is overwhelmingly powered by natural gas or renewable power. Because coal-fired plants emit far more $CO_2$ per unit of power than their replacements, total emissions of $CO_2$ from electric power generation declined almost 25% between 2005 and 2016, while gross domestic product grew and the amount of power generated remained essentially unchanged. This observed decline in annual $CO_2$ emissions from the electric power sector is 77% of the reductions that EPA projected would occur as a result of the CPP.

Members of Congress may have an interest—for legislative and oversight purposes, as potential commenters, and in responding to constituents—in understanding what it is that EPA has proposed to do with regard to the CPP. This report provides background on the CPP and its proposed repeal, describes the administrative steps that are required to repeal or amend a rule, and discusses how the CPP and its proposed repeal fit into the context of recent and projected power sector evolution.

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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] Because power plant $CO_2$ emissions account for about 30% of total U.S. anthropogenic emissions of greenhouse gases (GHGs), the CPP has been seen as the most important U.S. regulation addressing climate change.

Congress has taken a keen interest in the CPP. Following its promulgation, Congress passed a resolution of disapproval under the Congressional Review Act in December 2015 that would have overturned the rule. President Obama vetoed the resolution.

The courts and the states have also played key roles: After more than 100 parties, including 46 states, either petitioned the Court of Appeals for the DC Circuit to review the rule or intervened in support of it, the Supreme Court granted applications to stay the rule for the duration of litigation.

Now, EPA has regained the spotlight. With new leadership in the Trump Administration, EPA has proposed to repeal the rule that it had drafted and defended under President Obama.

As first steps in the repeal process, a 60-day comment period began following publication of the proposed repeal in the *Federal Register*. Following the comment period, EPA must review and respond to "each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period."[2] The proposed repeal will likely unleash a torrent of comments: Proposal of the rule itself in 2014 led to 4.3 million public comments—more than EPA had received on any proposed rule in its 45-year history.

Members of Congress may have an interest, as potential commenters and in responding to constituents, in understanding what it is that EPA has proposed. This report provides background on the CPP and its proposed repeal, describes the administrative steps that are required to repeal or amend a rule, and discusses how the CPP and its proposed repeal fit into the context of recent and projected power sector evolution.

## Background

EPA promulgated the CPP on August 3, 2015, under Section 111(d) of the Clean Air Act (CAA).[3] The rule would have required that states limit emissions of $CO_2$ from fossil-fueled power plants.[4] The rule would have phased in state-specific limits on power plant emissions or emission rates. The targets varied depending on the mix of power sources in each state, but overall EPA projected a 32% reduction in total power sector $CO_2$ emissions nationwide by the time the rule was fully implemented in 2030.

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[1] EPA, "Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Proposed Rule, 82 *Federal Register* 48035, October 16, 2017 (hereinafter, "Proposed Repeal"). Links to an EPA fact sheet and the Regulatory Impact Analysis are at https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan-0.

[2] 42 U.S.C. 7607 (d)(6)(B).

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

[4] See CRS Report R44341, *EPA's Clean Power Plan for Existing Power Plants: Frequently Asked Questions*, by James E. McCarthy et al.

Interest in the rule reflects what is generally conceded 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 have contended would be adversely affected by controls on $CO_2$ emissions from power plants. At the same time, an overwhelming scientific consensus has formed around the risks, potentially catastrophic, of GHG-induced climate change. Proponents of the rule maintain that the CPP addressed these risks in cost-effective ways that take account of ongoing changes in the electric power sector and that gave states and affected industry significant flexibility in complying with the rule's mandates. Others observe that $CO_2$ emissions have already declined significantly without the CPP as a result of other factors, including market forces, state and federal regulations, technological innovation, federal tax incentives, and other changes affecting the electric power industry.[5]

The CPP has not gone into effect: As noted, it has been stayed by the Supreme Court. Even had it not been stayed, its limits on $CO_2$ emissions were not scheduled to begin taking effect until 2022. In the short term, the Court's action has delayed planning requirements that would have determined how states intended to structure compliance with the rule's overall objectives.

## Executive Order 13783

Review of the CPP was required by Executive Order (E.O.) 13783, which President Trump signed on March 28, 2017. The E.O. required executive departments and agencies to "immediately review existing regulations that potentially burden the development or use of domestically produced energy resources and appropriately suspend, revise, or rescind those that unduly burden the development of domestic energy resources beyond the degree necessary to protect the public interest or otherwise comply with the law."[6] The order addressed specific CAA regulations, including the CPP for existing fossil-fueled electric generating units (EGUs), two proposed rules related to it, and New Source Performance Standards for new and modified EGUs. Each of these rules would limit $CO_2$ emissions from the electric power sector. The E.O. directs 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, and that it can be produced from coal, natural gas, nuclear material, flowing water, and other domestic sources, including renewable sources,"
- "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."

[5] 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.

[6] Executive Order 13783, "Promoting Energy Independence and Economic Growth," March 28, 2017, Section 2, https://www.gpo.gov/fdsys/pkg/FR-2017-03-31/pdf/2017-06576.pdf. 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.

## Administrative Procedures for Revising or Repealing a Rule

Repealing a promulgated rule requires that the promulgating agency go through the same steps as the original rulemaking, a process governed in this case by Section 307(d) of the CAA. Under Section 307(d), a rule must first be proposed in the *Federal Register* along with "a statement of its basis and purpose." The statement of basis and purpose must include a summary of the factual data on which the proposed rule is based, the methodology used in obtaining and analyzing the data, and the major legal interpretations and policy considerations underlying the proposed rule.

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.

The notice of proposed rulemaking must specify a period available for public comment. Following proposal and public comment, EPA can promulgate a final rule. The promulgated rule must also be accompanied by a statement of basis and purpose and an explanation of the reasons for any major changes from the proposed rule. As noted earlier, the promulgated rule must 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 rule may not be based (in part or whole) on any information or data that 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 Section 307(d) applies, the DC 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.[7]

## What EPA Proposed

On October 10, EPA proposed to repeal the CPP based on a change in its legal interpretation of Section 111(d) of the CAA. 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.[8]

In addition to the proposed repeal of the CPP, EPA has prepared and sent for interagency review an Advance Notice of Proposed Rulemaking (ANPRM) "to solicit information on systems of emission reduction that are in accord with the legal interpretation proposed in this notice (i.e., those that are applicable at and to an individual source)."[9] This would appear to be an acknowledgement that the agency may need to do more than repeal the CPP without committing

[7] 42 U.S.C. §7607(b), (d)(9).

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

[9] Proposed Repeal, 82 *Federal Register* 48036.

to any specific regulatory approach. EPA issued a finding in 2009 that GHG emissions endanger public health and welfare, a finding that it has not proposed to repeal. Because fossil-fueled electric power plants are the largest single source of U.S. anthropogenic GHG emissions, the CAA could arguably be said to require the agency to set standards for those emissions.

In setting emission standards, Section 111 requires standards of performance that reflect "the degree of emission limitation achievable through the application of the best system of emission reduction." While the term *system* is not further defined, a standard that meets EPA's current interpretation (i.e., that uses only measures applied at and to individual sources) might include requiring improved heat rates (i.e., greater efficiency) at individual fossil-fueled power plants or the use of cleaner fuels, such as natural gas in place of coal. In the past decade, more than 50 coal-fired power plants have switched to natural gas. Although there may be some economic and technical constraints on the choice of this option, natural-gas-fired power plants emit as much as 50% less $CO_2$ per unit of power produced.[10]

## Going Forward

The net effect of EPA's repeal and the ANPRM may be a continuing period of regulatory uncertainty for the states and industry. In the meantime, due to 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;[11] 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.

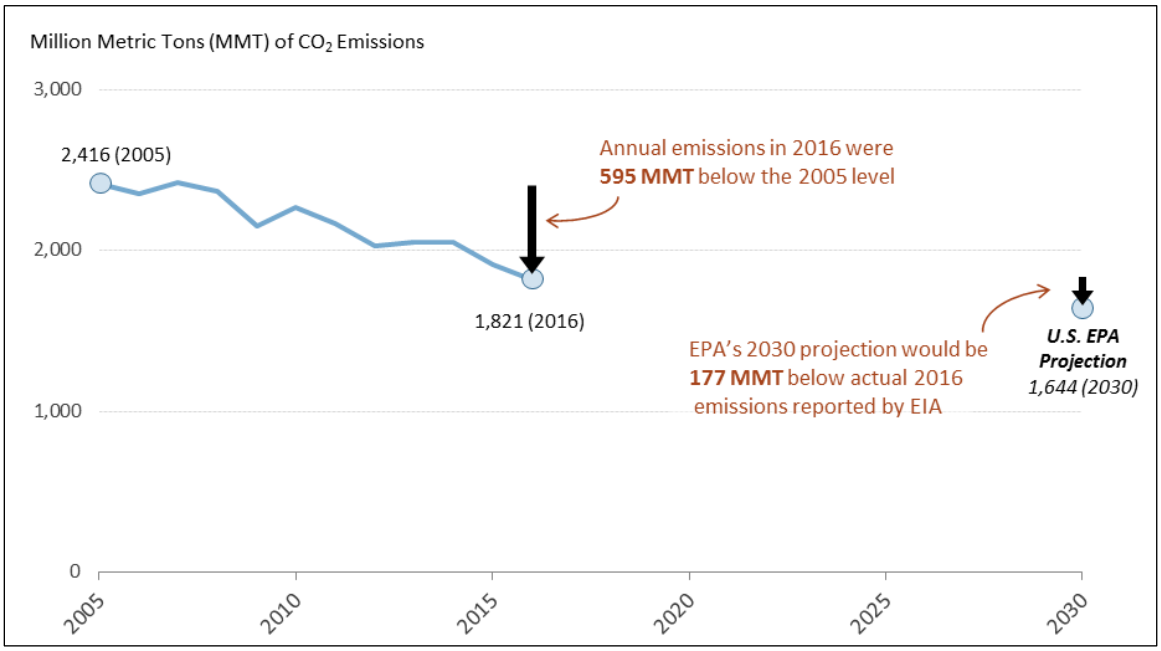
As a result of this combination of factors, between 2005 and 2016, emissions of $CO_2$ from electric power generation declined almost 25%, while gross domestic product grew and the amount of power generated remained essentially unchanged. The $CO_2$ emission reduction already achieved

[10] See CRS Report R44090, *Life-Cycle Greenhouse Gas Assessment of Coal and Natural Gas in the Power Sector*, by Richard K. Lattanzio.

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

represents 77% of the reduction that EPA expected the electric power sector to achieve by 2030 under the CPP (See **Figure 1**).

**Figure 1. GHG Emissions from Electric Power Generation, 2005-2016**




**Source:** Prepared by CRS; 2005-2016 data: U.S. Energy Information Administration, *Monthly Energy Review*, September 2017; 2030 projection: EPA, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," Final Rule, 80 *Federal Register* 64661, October 23, 2015, EPA data converted to metric tons by CRS.

Projections of future emissions from the electric power sector vary depending on numerous assumptions: The Department of Energy's Energy Information Administration (EIA), for example, has projected electricity sector GHG emissions to be 36% below 2005 levels in 2030 with the CPP and other assumptions in place; without the CPP, EIA projects a 22% decline from 2005 levels. A 22% reduction from 2005 levels would be an *increase* from the current level of emissions.[12] Others see a continuation of market forces and state regulation contributing to a decline in GHG emissions even without the CPP, although most likely not as great a decline as what would be achieved under the rule.[13]

Whatever the projection, it is clear that the changes to the industry over the last decade, while substantial, have been uneven. Electricity generation is influenced by state regulation, which in turn is influenced by state resources and the limitations of the transmission grid. California, Texas, Iowa, and a number of other states have seen rapid growth of renewables (especially wind), but other states remain committed to coal. Natural gas use for power generation has grown rapidly, but it has grown more in states with natural gas resources and more developed pipeline infrastructure.

The CPP was an effort to continue the trend toward lower $CO_2$ emissions evident in the last decade and to spread the lower emissions associated with renewables, natural gas, and efficiency

[12] EIA, *Annual Energy Outlook 2017*.

[13] See, for example, Rhodium Group, "What the CPP Would Have Done," October 9, 2017, http://rhg.com/notes/what-the-cpp-would-have-done.

more evenly among all the states. It set individual state emission targets. The targets would allow higher $CO_2$ emissions in states currently dependent on coal-fired power but require those states to make greater percentage reductions in emissions.

Without the CPP, the power industry would likely still undergo change as the result of market forces and the need to update or replace older generation facilities. But there would be greater differences among the states and, most likely, less overall reduction in GHG emissions than there would be in a CPP world.

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