

Digesting the US EPA's Clean Power Plan

Patricia DiOrio, Director, North American Power, IHS Energy

Lawrence J. Makovich, Vice President and Chief Strategist, Power Research, IHS Energy

Game changers are normally few and far between for the US electric power sector. But a newly proposed Environmental Protection Agency (EPA) regulation that targets carbon dioxide (CO₂) emissions from existing fossil-fueled power plants certainly has game-changing potential. The proposal is complex, will be difficult for power sector stakeholders to digest, and will take many years to play out.

The EPA's 2 June 2014 proposal, called the Clean Power Plan (CPP), is the cornerstone of President Barack Obama's 2013 Climate Action Plan (CAP) because power generation accounts for roughly one-third of total US CO₂ emissions. In the absence of new federal climate change legislation, President Obama resorted to using existing law, the Clean Air Act (CAA), which regulates emissions by setting performance standards for specific sources, including power plants. There is very little that can be done to reduce CO₂ emission intensity "within the fence line" of an existing power plant—there are no cost-effective technologies capable of producing the level of CO₂ reduction envisioned in President Obama's CAP. The EPA thus takes an expansive view of its authority under the CAA by relying on "outside-the-fence" measures as a means of reducing the calculated carbon intensity of the existing fossil-fueled power generation fleet. These outside-the-fence measures include running natural gas-fired power plants at the expense of coal-fired plants, increasing the use of demand-side energy efficiency and renewable energy, and preserving the nation's nuclear generation fleet. Although not highlighted as a compliance pathway in and of itself, closure and replacement of existing coal-fired plants is also a path toward compliance under the CPP. With its heavy reliance on outside-the-fence measures, the CPP's structure leaves it vulnerable to legal challenges and delay.

EPA's CPP proposal is complex, and assessing its stringency takes a herculean effort. A deviation from typical EPA rules under the CAA that assigns specific performance standards to different types of power generators, the CPP takes a completely different tack. Under the CPP, each state is assigned an individual emission rate goal based on EPA's assessment of the state's ability to reduce its fossil-fueled fleet's CO₂ intensity—in pounds of CO₂ per megawatt-hour—based chiefly on those outside-the-fence measures. The end result is a disparate set of CO₂ emission rate goals and compliance burdens that vary widely from state to state.

A state's absolute CO₂ emission rate goal under the CPP, and even the required percent change in a state's CO₂ emission rate, fails to provide a window into the likely level of effort required for compliance. Assessing the CPP's stringency and potential compliance burden therefore requires careful analysis of each state's existing fuel mix, policies, and market fundamentals. Even states with apparently similar emission rate reduction goals can face completely different incremental compliance efforts. Take for example two states, New Mexico and North Carolina. Both have existing fossil generation fleets with similar CO₂ intensity and both have similar required reductions in emission rates, on an absolute and percentage basis under the CPP proposal. IHS Energy's analysis for these two states shows vastly different outcomes. North Carolina faces a challenging compliance effort that could include substantial coal-fired generator retirements and adoption of additional renewable power and energy efficiency policies. In contrast,

Contacts

Patricia DiOrio, Director
Patricia.DiOrio@ihs.com

Lawrence J. Makovich, Vice
President and Chief Strategist
Lawrence.Makovich@ihs.com

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New Mexico would likely comply with its 2030 goal based on existing renewable power and demand-side energy efficiency policies.

Understanding the incremental effort required for compliance is the first step in digesting the EPA's CPP proposal. If implemented as proposed, states will face several key decisions as they work to develop implementation plans. These include whether to join other states and form multistate plans and whether to base compliance on the CO₂ emission rates included in the CPP proposal or convert to a mass-based approach. Expect legal challenges and political discord as states grapple with compliance options and as the disparate state compliance burdens become clearer. To be sure, a final CPP may ultimately look quite different from the proposal. Only time will tell how the power industry will ultimately come to grips with its latest potential game changer.