

Opportunities for States to Pursue Multistate Compliance Options under the Clean Power Plan

Executive Summary

In August 2015, the U.S. Environmental Protection Agency (EPA) finalized a rule under Section 111(d) of the federal Clean Air Act to reduce emissions of greenhouse gases (GHGs) from existing power plants, referred to as the Clean Power Plan (CPP).¹ As states have begun to examine their potential compliance strategies under the CPP, many have been interested in the option of combining their efforts with those of other states as a way to lower the overall cost of compliance and also address concerns with electricity system reliability. In addition to the potential benefits, there are drawbacks. Governors should consider both those benefits and drawbacks to help assess which option is most advantageous to their state.²

Although a February 2016 ruling of the U.S. Supreme Court stayed implementation of the CPP pending resolution of legal challenges, some governors have directed their states to continue their planning efforts so that they can be well positioned for compliance if the CPP remains in effect. Other governors have suspended such actions while litigation continues.³ This paper is intended to provide insights to those states moving forward in the near term and assist those that might move forward in the future.

Options for Multistate Compliance

For states interested in achieving compliance through multistate trading, the CPP identifies two approaches. In one, groups of two or more states formally link their plans (and compliance targets) and engage in a jointly administered trading market. In the other, each state submits an individual plan without entering into a formal agreement with other states, but the plan includes

elements that make it trading ready. Such elements allow electric generating units (EGUs) in a state to trade compliance obligations with EGUs in other states that meet similar criteria, most notably the state's approach to mass-based or rate-based compliance.

Potential Benefits of Multistate Compliance

EPA's analysis of its initial proposal suggested that multistate trading could lower overall compliance costs by approximately 21 percent between 2020 and 2030; modeling by others suggests that total costs (but not necessarily all state-specific costs) decrease as the number of states participating in a multistate approach increases. A state plan that includes trading also could help address electricity reliability concerns, as power plant owners or operators can purchase allowances—which permit emission of GHGs—from a larger pool to cover excess emissions and avoid the prospect of having to shut down or limit run times to be in compliance.

Potential Drawbacks to Multistate Compliance

At the same time that states consider potential benefits of trading, they also need to study the state-specific implications of the uncertainty about future trading partners for both states and specific EGUs. In addition, states need to address the administration of the approach and demonstration of compliance, both of which depend on the type of state plan a group of states chooses (e.g., a jointly administered trading market or a trading-ready approach as described by the CPP).

Evaluating the Options

The decision to allow for or formally enter into

multistate compliance should be made in conjunction with other decisions and evaluations about how to balance CPP compliance with other energy, environmental and economic goals. Governors have a lead role in providing guidance to the agencies that will design and implement their state’s compliance strategy to ensure that all necessary decisions, including those concerning multistate compliance, are informed by and align with their state policy goals.

Introduction

In August 2015, the U.S. Environmental Protection Agency (EPA) finalized a rule under Section 111(d) of the federal Clean Air Act which is projected to reduce emissions of greenhouse gases (GHGs) from existing power plants by 32 percent from 2005 levels by 2030. The rule is referred to as the Clean Power Plan (CPP).⁴ Under Section 111(d), EPA must define technologies and measures that identify a best system of emissions reductions (BSER) for the regulated pollutant and calculate state emissions targets using the BSER.⁵ States are responsible for developing, implementing and, along with EPA, enforcing a plan approved by EPA that meets the state’s emissions target. States have flexibility in designing their plans, including using technologies and measures not included in the BSER, such as energy efficiency, if they choose. As finalized, the EPA rule set timelines that required states to submit their final plan to the agency by September 6, 2016, or submit an initial plan with a request for an extension to no later than September 6, 2018, for the final plan; those deadlines are now most likely no longer valid.

Legal challenges to the CPP are pending in the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit).⁶ Twenty-seven states are among the parties challenging the CPP, although a number of other states have filed briefs in support of EPA. The U.S. Supreme Court granted a stay against the CPP on February 9, 2016, pending the resolution of the legal challenges.⁷ In May 2016, the D.C. Circuit accepted a request to have the full court hear the challenge rather

than a three-judge panel. That delayed the start of oral arguments from June 2016 (as originally scheduled) until September 2016. The stay prevents EPA from implementing the CPP until the legal process is complete. In the interim, some states have indicated that they will continue efforts to reduce greenhouse gases (inclusive or exclusive of CPP planning), and other states have halted CPP planning.⁸ Therefore, states may still be considering compliance options in the near term, including the options for multistate compliance, while others may be considering them in the future should the rule be upheld.

States have options for reducing the cost of compliance with the CPP through interstate coordination or cooperation. Those options include states directly coordinating their compliance efforts through a multistate plan and developing an individual trading-ready plan that allows power plants to trade their right to emit GHGs with power plants in different states.⁹ EPA does not limit interstate trading to neighboring states or states within a region that are interconnected by the electric power grid.

When looking at their options, states should consider several potential benefits to a compliance strategy that leverages reduction opportunities in other states. First, a state could achieve a lower overall cost of compliance by allowing its affected EGUs to augment their emissions reductions efforts with those from generators in other states whose cost of reductions are lower. Alternatively, a state with great potential for low-cost emission reduction options could expand the market for those reductions and become a net exporter of credits or allowances, supporting economic activity in the state. Second, multistate coordination could help address concerns about maintaining the reliability of the electric power system. For example, allowing EGUs to purchase compliance obligations in a multistate trading market would allow higher-emitting plants to continue to run during times of high demand without the risk of noncompliance. In addition, vertically integrated utilities whose service territory

spans several states could operate their systems at lower cost with greater reliability if permitted to trade across state lines.¹⁰

State Plan Options

Under the CPP, EPA identifies two options for a compliance approach that involves some level of multistate coordination:

- Two or more states may combine their compliance targets and submit a multistate plan (which may be a single plan among all the states or individual plans that make up a multistate plan);¹¹ or
- States may develop plans, without combining targets, that are trading-ready, meaning that a state's plan contains certain elements that allow EGUs there to trade with EGUs in other states, either with or without predetermining those other states.

Both options have potential advantages and disadvantages that states will need to consider. Those are discussed in the next section.

Multistate compliance plans

A multistate plan would create an interstate market for compliance credits. How that market would function depends on whether a state chooses a mass-based or rate-based compliance approach. The text box on page 4 provides additional discussion of mass-based and rate-based approaches to compliance. Under a mass-based compliance approach, states combine their mass-based goals and allow trading of allowances among their EGUs, similar to existing multistate GHG trading programs such as the Regional Greenhouse Gas Initiative (RGGI) in the Northeast.¹² Under a rate-based compliance approach, states would need to either calculate their combined emissions rate or use standard emissions rates in common for different fossil fuel technologies provided by EPA—i.e., subcategory carbon dioxide (CO₂) emission performance rates. Calculating a combined rate-based target is more complicated than developing an aggregated mass-

based goal; EPA provides guidance for how states might calculate a combined rate based on a weighted average of each state's rate targets and 2012 emissions levels from affected EGUs.

One benefit of a multistate plan is that it provides utilities or plant operators with certainty about whom they could trade with, as EGUs would only be allowed to trade with other EGUs in the states specified in the plan. Additionally, states in a multistate plan may be able to reduce administrative costs by sharing processes for implementing their state plan, such as a centralized entity to certify and track compliance credits. However, states would need to revise the multistate plan if any partner state leaves the plan or if a new state joins the plan in the future, creating an additional administrative burden. The greater administrative burden posed by multistate plans, such as the potential need for revision, may not appeal to states, since they may be able to achieve the same benefits in other ways. For example, states in existing multistate GHG trading programs like RGGI might be able to continue their programs through individual plans.¹³

Individual plans with trading-ready options

States may opt to develop an individual plan with provisions that allow the state's EGUs to be trading-ready, where they can choose to opt-in to trading as long as they follow specified requirements common across states that also have chosen that option. EPA allows for trading-ready plans for both rate-based and mass-based compliance options, although the EGUs may only trade with other EGUs whose respective state plans use the same compliance option. States trading under a mass-based approach must use an EPA-approved or EPA-administered emission and allowance tracking system, although it is not required that each state use the same system for rate-based trading-ready plans.¹⁴ Potential tracking systems could include newly developed tracking systems,¹⁵ existing tracking systems for GHG emissions (such as the ones used by RGGI or **California**) and tracking systems in use for renewable energy credits adapted to track compliance instruments under the CPP;

Rate-Based vs. Mass-Based Approaches to Compliance and the Implications for Multistate Strategies

In addition to choosing between single-state and multistate approaches, states have a choice of the type of emissions target they will use to comply with the Clean Power Plan: meeting a rate-based emissions target or an equivalent mass-based target as calculated by EPA. The choice between rate- and mass-based targets will affect which states can trade with each other in the context of multistate trading in both individual and multistate plans. States with rate-based targets are not permitted to trade with states with mass-based targets and vice-versa.

Rate-Based Approach

Under a rate-based approach, a state will have to meet emissions rate goals, measured in tons of carbon dioxide (CO₂) per megawatt-hour of generation. State goals can be calculated in three ways: subcategorized rates specific to different types of fossil generation, a blended rate across all fossil fuel-powered generators in the state or specific rates for each individual fossil unit. Eligible units generate emission rate credits (ERCs) that can be traded as a compliance instrument. States may engage in multistate compliance only if they use subcategorized rates or blend their rate with the rate of one or more states with whom they have entered into a formal agreement with for multistate coordination.

Mass-Based Approach

Under a mass-based approach, a state will have to reduce its gross emissions tonnage (in tons of CO₂) to a specified amount that is meant to be equivalent to a state's rate-based target. States using a mass-based approach can either adopt targets specific to the generation fleet—an approach consisting of only electric generating units (EGU)—or develop a plan with a broader set of policies to reduce emissions (state measures approach). EGUs can achieve their targets under the state plan by either by reducing their overall output or by holding emissions allowances that count against their emissions totals. Although plans using the state measures approach can be adjusted to be eligible for multistate compliance, states using the EGU-only approach are the most easily adaptable to various types of multistate compliance.

EPA would need to approve each of those approaches as they are outlined in state plans.¹⁶ For example, the RGGI states have individual state regulations, but a third-party entity manages the allowances for the states using a common tracking system.

Under a trading-ready individual plan approach, a state is less dependent on the actions of other states than under a multistate plan. Being trading-ready does not require a state to decide on which states

to partner with in advance—a state could either determine its trading partners in advance and specify them in its state plan or delegate that decision to the EGUs, potentially giving them greater flexibility to choose with whom they will be trading. With an individual trading-ready state compliance plan, the elements of the plan do not need to be reconsidered if another state drops out or joins the trading system. Areas where states could still coordinate in advance include tracking systems (for mass-based trading);

evaluation, measurement and verification (EM&V) methodologies (for rate-based trading); and the form of their compliance obligation (rate or mass). While states may benefit from coordinating, they are not required to have identical tracking systems or EM&V plans under a trading-ready approach. Tracking systems and EM&V plans must be approved by EPA. EPA provides guidance on how to consider these aspects of a state plan submittal through its proposed Model Rule and Federal Plan.¹⁷

Considerations for States

Before states decide on whether to include some level of multistate coordination in their compliance strategy, they should consider a number of factors, such as: the form of the compliance obligation (rate- or mass-based); energy efficiency programs; and the additional complexity and time associated with a coordinating a multistate plan submission vs. a trading-ready approach or an approach with no mechanism for interstate trading. Additional considerations include the costs associated with compliance and the potential effect (positive or negative) on the reliability of the electricity system. States might also consider how the net effects of those additional factors fit into the state's broader energy, environmental and economic goals.

Compliance Obligations

A state's choice of a multistate compliance approach would likely inform, or be informed by, the decisions that other states must make concurrently as they design their own compliance plans. One central decision is whether to implement a rate-based or mass-based trading approach. Although EPA allows for interstate trading under either approach, states that adopt a mass-based target are not permitted to trade with states that adopt a rate-based target (and vice-versa) because of the different nature of the tradeable units being produced in each type of system.¹⁸ States choosing to implement rate-based trading will also have to consider the ramifications of blending their rates with a partner state or using EPA-approved subcategory rates for different

types of fossil generation.¹⁹ A multistate plan is the only way a state with a single blended rate goal can participate in interstate trade of emission rate credits (ERCs)—precluding the trading-ready approach. Furthermore, states using rate-based approaches will have to develop EM&V methodologies for ERCs, which require EPA approval. EM&V systems are generally not required for allowances under a mass-based system. A state's decision about its approach to compliance is not independent of the decisions of other states; for example, if a state determines that a trading-based compliance option is more viable, it might be limited if prospective trading partners opt for an incompatible approach.

Evaluation, Measurement and Verification for Energy Efficiency

States may want to consider the role of energy efficiency in their plans and how they will evaluate, measure and verify energy savings attributable to their energy efficiency programs. Many states have experience with measuring and validating reductions in energy use attributable to programs intended to improve energy efficiency. Under the CPP, states that take a rate-based approach will need to develop and describe an EM&V approach for energy efficiency as part of their plan; states that use a mass-based approach do not face a similar requirement in most circumstances.²⁰

Timing and Complexity

States should consider the additional time and complexity associated with participating in a multistate compliance approach, especially the work needed to coordinate with other states in the multistate plan. Multistate compliance plans take more time to coordinate than a trading-ready approach or a single-state plan that does not rely on trading. Trading-ready plans are likely to take more initial effort than a single-state plan without any trading (within the state or with other states), since a state might need to undertake additional regulatory or administrative steps to identify and join an approved tracking program.²¹ However, states that opt to enter into an existing or

EPA-administered tracking program might find that little more work is needed for a trading-ready plan than for a single-state plan.

Compliance Costs

States should have a firm grasp of if and how interstate trading could affect their cost of compliance. States might want to model different levels of interstate trading to determine the potential effect of multistate approaches on compliance costs, including the effect of expanding the geographic area in which trading occurs and whether trading regions are contiguous or align with electricity markets. Computer modeling completed before the release of the final rule found that interstate trading lowered the total cost across a region (but not necessarily all state-specific costs) of compliance when compared with single-state compliance; costs were reduced further in most regions if all states within a contiguous region traded with one another and even more if trading occurred at a national level.^{22,23,24} EPA's analysis of the proposed rule estimated a total cost savings of approximately 21 percent over the compliance period if states opted for a plan that included a regional trading approach.²⁵

Modeling by several regional transmission organizations (RTOs) using the targets and parameters from the proposed rule suggested that a trading approach might lower overall costs of compliance within their transmission footprints.²⁶ However, costs might not be lower for each individual state. The Southwest Power Pool (SPP) found that costs for states within its region could be 40 percent lower with multistate trading than if each state decided to comply on their own.²⁷ The Midcontinent Independent System Operator performed modeling that estimated \$3 billion in annual savings if compliance was done across the full region rather than nine smaller sub-regions.²⁸ PJM Interconnection, the regional transmission organization (RTO) that coordinates electricity flows through thirteen states in the eastern half of the U.S., also determined that state-by-state compliance options would likely result in higher compliance costs for most states within PJM's territory than regional compliance options.²⁹

Electric Reliability

Choosing to adopt a multistate approach can also affect a state's ability to ensure the reliable delivery of electricity, where it has the authority to do so.³⁰ A multistate trading system that increases the pool of credits or allowances that power generators can use to achieve compliance could reduce the potential for negative effects on the reliability of the electricity system. Trading also removes any strict limits on how much a particular plant can run, since a plant can purchase allowances from another unit to continue to operate. Nevertheless, the incentive to operate plants that emit relatively large amounts of GHGs will be decreased as the cost of allowances increases. EPA also has described a reliability safety valve that would allow states to amend their plans to address unanticipated reliability challenges that would otherwise force conflicts with their compliance obligations.³¹

EPA acknowledges in the final CPP that multistate trading will help address reliability concerns.³² However, EPA does not state that multistate trading is sufficient for meeting the rule's requirements for addressing reliability. Under the CPP, EPA requires that each state demonstrate how it has considered reliability in its final plan and suggests consultation with regional reliability organizations or planning authorities.³³ Thus, states might choose to perform additional modeling, including in consultation with their utilities or regional reliability coordinators, to determine if a multistate approach would have an effect on bulk system reliability. In May 2016, the North American Electric Reliability Corporation, which is the electric reliability organization for North America, conducted an analysis of the potential reliability effects of the final rule. That analysis included an assessment of a scenario with multistate trading and found that national-level trading would likely mitigate any potential reliability effects (in addition to lowering overall compliance costs) because more existing baseload generation resources would stay operational.³⁴ Since multistate compliance scenarios could be more limited in scope than that

analysis, states should explore state or regional-specific modeling to understand the full ramifications of the rule on reliability and how trading might change those effects.

Many states have begun conversations with the reliability coordinators in their region regarding reliability and stress tests that would use specific state plans (once developed and submitted), but states have additional time to consider various aspects of multistate compliance before submitting plans to EPA. Under the CPP, states must demonstrate that they have considered reliability in the development of their plans. This coordination with reliability coordinators is offered by EPA as one way to meet this requirement.

Conclusion

Interstate trading approaches to CPP compliance offer potentially significant benefits to states, which may include lowering the overall compliance costs and addressing electric reliability concerns. However, engaging in multistate compliance can add a layer of complexity to the state's decision-making process and change how states consider other elements of their plan. The different ways that states can engage in interstate trading for compliance (either through multistate or trading-ready plans) give states the flexibility to balance those considerations. Governors have an opportunity to engage in this process by providing guidance to the state agencies designing and implementing their compliance strategies to take an approach that best fits their state policy objectives.

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Endnotes

- ¹ U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 64662-64964, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ² NGA has no policy or position on the CPP, state legal challenges, the Supreme Court’s ruling to stay implementation or states’ decisions to continue with CPP planning.
- ³ E&E Publishing, “E&E’s Power Plan Hub,” http://www.eenews.net/interactive/clean_power_plan#planning_status (accessed August 25, 2016).
- ⁴ US EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205, (October 23, 2015): 64662-64964, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ⁵ U.S. EPA, Final Rule, at 64666-64667.
- ⁶ *State of West Virginia et al. v. United States Environmental Protection Agency*, No. 15-1363 (and consolidated cases) Oct. 3, 2015. http://www.eenews.net/assets/2016/02/22/document_ew_03.pdf.
- ⁷ *State of West Virginia et al. v. United States Environmental Protection Agency*, 577 U.S. (2016). http://www.eenews.net/assets/2016/02/09/document_pm_03.pdf.
- ⁸ “E&E’s Clean Power Plan Hub,” E&E Publishing, LLC, http://www.eenews.net/interactive/clean_power_plan#planning_status (accessed September 22, 2016).
- ⁹ NGA has no policy or position on the CPP, state legal challenges, the Supreme Court’s ruling to stay implementation or states’ decisions to continue with CPP planning.
- ¹⁰ Vertically integrated utilities are those that both own generation assets and serve customers.
- ¹¹ U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 64946, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ¹² U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 64839, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ¹³ The RGGI program could be one example of CPP compliance as a set of individual state plans that use a trading-ready approach in which the allowance tracking system is open only to the RGGI states. That type of scenario is described in the next section. However, it is unclear if the RGGI program as currently implemented would meet CPP plan requirements. More information on the RGGI program can be found here: <http://www.rggi.org>.
- ¹⁴ U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 64946, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ¹⁵ One process is underway to establish a new tracking system specifically for certified savings from energy efficiency measures, an effort named the National Energy Efficiency Registry: <https://www.theclimateregistry.org/thoughtleadership/energy-efficiency/>.
- ¹⁶ U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 64839, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ¹⁷ U.S. EPA, Proposed Rule, “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,” *Federal Register* 80, no. 205 (October 23, 2015): 65002, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22848.pdf>.
- ¹⁸ U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 64912, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.
- ¹⁹ The difference between rate targets is explained further in the text box on page 4.
- ²⁰ EM&V is required under a mass-based system under the Clean Energy Incentive Program (an early action program for energy efficiency in low-income communities) and if an allocation to energy efficiency is explicitly being used to address leakage as defined in the CPP.
- ²¹ States might also find that taking advantage of EPA’s Clean Energy Incentive Program, an element of the final rule that allows states to receive credit for early implementation of renewable energy or low-income energy efficiency, requires them to make certain decisions before or at the initial deadline.
- ²² Martin T. Ross, Brian C. Murray and David Hoppock, *The Clean Power Plan: Implications of Three Compliance Decisions for U.S. States*, May 2015, https://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_15-02_full_pdf.pdf (accessed December 10, 2015).
- ²³ Jennifer Macedonia et. al., “Insights from Modeling the Proposed Clean Power Plan,” April 2015, <http://bipartisanpolicy.org/wp-content/uploads/2015/04/BPC-Clean-Power-Plan-Slides.pdf> (accessed December 3, 2015).
- ²⁴ John Larsen et. al., “Remaking American Power: Preliminary Results,” July 24, 2014, http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1409D_CGreenhouseGasRulesRemakingAmericanPower_Larsen.pdf (accessed December 3, 2015).
- ²⁵ U.S. EPA, “Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants,” June 2014, <http://www.epa.gov/sites/production/files/2014-06/documents/20140602ria-clean-power-plan.pdf> (accessed January 11, 2016). The Regulatory Impact Analysis for the Final Rule did not include comparable statistics on the cost reductions associated with trading.
- ²⁶ At the time of publication, an assessment of the effects of multistate trading had not been included in any of the final rule modeling completed by RTOs.
- ²⁷ Southwest Power Pool, *SPP Clean Power Plan Compliance Assessment*, April 8, 2015, <http://www.spp.org/documents/28611/spp%20regional%20compliance%20assessment%20report.pdf> (accessed November 15, 2015).
- ²⁸ Midcontinent Independent System Operator, *Analysis of EPA’s Proposal to Reduce CO₂ Emissions from Existing Electric Generating Units*, November 2014, <https://www.misoenergy.org/Library/Repository/Communication%20Material/EPA%20Regulations/AnalysisofEPAsProposaltoReduceCO2EmissionsfromExistingElectricGeneratingUnits.pdf> 12-13 (accessed December 4, 2015).
- ²⁹ PJM Interconnection, *PJM Interconnection Economic Analysis of the EPA Clean Power Plan Proposal*, March 2, 2015, <https://www.pjm.com/~/>

[media/documents/reports/20150302-pjm-interconnection-economic-analysis-of-the-epa-clean-power-plan-proposal.ashx](http://www.epa.gov/media/documents/reports/20150302-pjm-interconnection-economic-analysis-of-the-epa-clean-power-plan-proposal.ashx) 77-84 (accessed December 3, 2015). The PJM region includes all or part of DE, IL, IN, KY MD, MI, NJ, NC, OH, PA, TN, WV and VA.

³⁰The authors recognize that state jurisdiction over reliability is limited to the distribution portion of the electric power grid, and that the North American Electric Reliability Corporation and the regional reliability organizations have the jurisdiction and authority to maintain reliability of the bulk electric power system.

³¹ U.S. EPA, “Clean Power Plan – Keeping Energy Affordable and Reliable,” Fact Sheet (Washington, DC: U.S. EPA), <http://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-keeping-energy-affordable-and-reliable> (accessed December 4, 2015).

³² U.S. EPA, Final Rule, “Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule,” *Federal Register* 80, no. 205 (October 23, 2015): 94875, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>; U.S. EPA, Proposed Rule, “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,” *Federal Register* 80, no. 205 (October 23, 2015): 64981, <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22848.pdf>.

³³ U.S. EPA, “Clean Power Plan – Keeping Energy Affordable and Reliable,” Fact Sheet (Washington, DC: U.S. EPA) , <http://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-keeping-energy-affordable-and-reliable> (accessed December 4, 2015).

³⁴ North American Electric Reliability Corporation, *Potential Reliability Impacts of EPA’s Clean Power Plan: Phase II*. May 2016, <http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/ CPP%20Phase%20II%20Final.pdf>. (accessed July 22, 2016).