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Preparing for 111(d): 10 Steps Regulators Can Take Now

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Introduction

The publication of the U.S. Environmental Protection Agency's (EPA) proposed rule to reduce greenhouse gas (GHG) emissions from existing power plants under section 111(d) of the federal Clean Air Act in the *Federal Register* on June 18, 2014, marks the official launch of a multi-year engagement between EPA and state regulators.[1] EPA's proposal reflects a comprehensive and flexible integration of energy and environmental policy. State regulators have long called for EPA to link these two important policy areas more directly.[2] EPA further extended the rule's flexibility by setting state-specific targets that allow each state to measure progress against itself. Moreover, it accepts policies that reduce GHG emissions both at the power plant level and more broadly through demand-side and renewable programs that reduce the need to utilize fossil-fueled supply resources.[3]

EPA's flexibility offers great freedom, but also attaches unusual responsibility. The proposal provides little specific guidance for state implementation, and in numerous places requests parties' comments on the approaches used in developing it. Following the release of the proposed rule, numerous parties published summaries and opinions. Sound advice for the state energy and environmental regulators charged with developing and implementing state compliance plans, however, remains the exception. This paper focuses on what state officials can do now, and over the coming year, to lay the groundwork for developing an effective, approvable 111(d) plan.

What Can State Regulators Do Now?

The typical response to a new federal regulation is to try to analyze all the options in order to determine the most cost-effective approaches for possible implementation. For the 111(d) proposal, however, the number of options is too great, the available economic models are generally too limited or otherwise inadequate, the time window is too short, and states have too few resources to consume them analyzing rule provisions that may never take effect. States will be better served if regulators instead consider these actions:

1. **Engage with fellow state regulators.** State utility regulators, environmental regulators, consumer advocates, and state energy officers serve the same jurisdiction and their actions often impact each other, but routine communication among them remains rare.

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1 EPA responded to states' and others' requests for additional time by providing a 120-day comment period, which closes October 16, 2014. Finalization of the 111(d) rule remains scheduled for June 2015.

2 In 2009, for example, the National Association of Regulatory Utility Commissioners' (NARUC) Task Force on Climate Policy (the predecessor to NARUC's current Task Force on Environmental Regulation and Generation) recognized that power sector carbon emissions could be addressed by relying on clean energy policies: "For decades, the goals of State clean energy investment have been consistent with initiatives that only now are being explicitly described as 'carbon policies'." Task Force on Climate Policy (2009). *State Clean Energy Policies: the Foundation for an Electric Sector Cap-and-Trade Program.* Washington, DC: National Association of Regulatory Utility Commissioners, at http://www.naruc.org/Publications/ClimateIssueBrief4_Jul2009.pdf.

3 These have commonly been referred to as "inside the fence line" and "outside the fence line" options.

Development of 111(d) compliance plans necessitates that these officials work hand-in-hand to achieve optimal results. For instance:

- *Compliance obligations* under the final 111(d) rule will likely fall solely to state air quality regulators because statutory authority over emissions policies typically resides with them; but
- *Financing and cost recovery* of measures taken by utilities under EPA's four 111(d) "building blocks" will fall solely under the purview of energy regulators.

The shortcomings evident in this traditional division of labor suggest that it is crucial for energy and environmental regulators, advocates, and energy officers to have regular and detailed dialogues in planning for 111(d). Further, the extended compliance window that EPA's proposed rule offers (~15 years) will enable state officials to partner in jointly devising trial or pilot programs, and executing "plan, do, check, act" cycles[4] on potential compliance options, before the final 111(d) carbon intensity standard must be met in 2030.

2. **Engage with other states.** The continental U.S. power sector consists of three large, interconnected synchronous grids. Every state (excluding Alaska and Hawaii) is connected electrically to its neighbors, thus every state's 111(d) plan can potentially impact its neighboring states. EPA will allow states to join together to submit multi-state compliance plans, but even where states are not interested in a multi-state compliance plan, they have good reason to share information, approaches, and ideas with their neighbors concerning 111(d) compliance options. For example, one state may focus on improving heat rate and re-dispatch, while an adjacent state may focus on energy efficiency, nuclear, and renewable energy. These policies will likely influence the operation of power plants in both states, and coordination can help reveal potential constraints or areas where complementary reductions can be achieved.

3. **Engage and strengthen relationships with EPA regional offices.** The ten regional EPA offices across the country have primary responsibility for reviewing and approving state 111(d) plan submittals. State regulators will be well served by communicating early and often with EPA regional office staff. Early engagement with EPA regional offices can assist in initial consideration of compliance options, offer input relative to partnering with others in a multi-state compliance plan, help identify potential deficiencies, and recommend overlooked approaches that could help in meeting GHG reduction obligations. Discussions between EPA regional offices and state officials can also help avoid surprises and chart a more direct path toward approval of a state's 111(d) plan.

4. **Initiate or deepen engagement with the ISO/RTO or those responsible for managing the regional electricity grid.** EPA's 111(d) proposal specifically references the ISO/RTO Council and its offer to help states evaluate policies and their effects in meeting the proposal's trajectory of GHG emissions reductions. Even in states not considering a multi-state plan, data and resources from the ISO/RTO, the regional reliability organization, or balancing authorities can help inform long-term planning, provide emissions information, and characterize how dispatch could be influenced by demand-side and supply-side measures. ISO-New England (ISO-NE) has developed emissions factors for each state it serves and has characterized emissions from marginal units, and its Environmental Advisory Group (comprised of energy and air officials and ISO-NE technical staff) has conducted multiple collaborative efforts over the last 15 years on demand response, distributed resources, and the regional capacity market. PJM has likewise started to work with the air regulators in its region.

5. **Evaluate the state's evaluation, measurement, and verification (EM&V) protocols for energy efficiency (EE) programs.** Cost-effective demand-side resources are expected to be the foundation of many state 111(d) plans. EM&V best practices have been explored by the Northeast Energy Efficiency Partnerships' (NEEP) EM&V Forum, the Pacific Northwest Regional Technical Forum, and other regional energy efficiency organizations. These efforts reflect collaborations between EE service

4 Quality pioneer W. Edwards Deming in the 1950s proposed that business processes should be analyzed and measured in a continuous feedback loop so that managers can identify and change the parts of the process that need improvements. Deming's continuous loop is commonly known as the "Plan, Do, Check, Act" (PDCA) cycle. See http://balancedscorecard.org/?TabId=112 or https://deming.org/theman/theories/pdsacycle.

providers and technical staff from state energy offices. The NEEP effort also includes air regulators. States in ISO-NE and PJM whose EE programs have qualified to participate in regional capacity markets enjoy a solid EM&V foundation that can readily be adapted to state or regional 111(d) plans. State 111(d) plans in which EM&V is consistent with such best practices will likely enjoy more expeditious approval.

6. **Update or conduct maximum potential studies for EE and renewable energy (RE).** The history of EE studies reflects a continuing and robust trajectory of energy savings, with developing technologies regularly creating "low-hanging fruit" anew (e.g., LEDs replacing CFLs, which replaced incandescent light bulbs). Connecticut's updated EE study in 2008, in fact, found more potential energy savings than its 2004 EE study. Similarly, the National Renewable Energy Laboratory (NREL) has developed a model framework for RE potential studies and has evaluated state-level RE potential. EE and RE potential studies identify and characterize the technical, achievable, and economic potential of various EE and RE programs and measures. Their results should be readily included in state 111(d) plans under EPA's proposed third and fourth "building blocks."

7. **Determine if additional value can be obtained from state EE and RE programs.** States that are already at or above EPA's proposed target levels for EE and RE could consider selling renewable energy credits (RECs) or "white tags" (EE credits) to states that have not yet achieved their EPA targets. The revenue from such sales could be re-invested in additional EE and RE, fostering even greater opportunity. Where EE and RE programs are less mature, states can determine how readily these programs could be expanded or enhanced. A note of caution, however: ensure that domestic needs are met first. If a state has significant wind power resources, for example, but sells the RECs out-of-state, its wind resources will probably not count toward its 111(d) obligations. They *will* count in whatever state purchased the RECs (and will count only once).

8. **Incorporate GHGs in relevant energy and environmental planning and regulatory processes.** Many states' integrated resource planning (IRP) processes already warrant update and strengthening, so it is timely to build in GHG considerations. IRPs like those recently developed by Tennessee Valley Authority (TVA)[5] and Xcel Energy (Minnesota)[6] have evaluated how demand-side and RE resources can meet expected future load growth. Similarly, the Northwest Power and Conservation Council's Sixth Power Plan envisions most of the region's load growth to be met by demand-side resources.[7] IRP processes can be strengthened by explicitly including the four "building blocks" from EPA's 111(d) proposal to help determine least-cost means to achieve requisite GHG emissions reductions. Some observers have even suggested integrating environmental compliance directly into IRP-like processes.[8] Beyond these steps, several states have developed comprehensive energy plans serving a strategic, economic, competitive, and/or jobs rationale. Some or all elements of these plans may be able to be re-purposed in 111(d) plans to help achieve compliance.[9]

9. **Consider the staging of actions to reduce GHG emissions.** EPA's proposal specifies four different "building blocks" that in aggregate can create the GHG emission reductions targeted by the proposed rule. States with good EE and RE programs may be able to achieve

5 Tennessee Valley Authority (2011). *Integrated Resource Plan: TVA's Environmental & Energy Future.* Knoxville, TN: Tennessee Valley Authority. See http://www.tva.gov/environment/reports/irp/archive/pdf/Final_IRP_complete.pdf.

6 Xcel Energy (2010). *Application for Resource Plan Approval 2011—2025.* Minneapolis, MN: Xcel Energy. See https://www.xcelenergy.com/About_Us/Rates_&_Regulations/Resource_Plans/MN_Regulatory_Upper_Midwest_Resource_Plan_2011_-_2025.

7 Northwest Power and Conservation Council (2010). *Sixth Northwest Conservation and Electric Power Plan.* Executive Summary, page 1. See http://www.nwcouncil.org/media/6284/SixthPowerPlan.pdf.

8 In Oklahoma Corporation Commission (OCC), Cause No. PUD 201100077 (2011), one environmental group proposed that the OCC adopt "Integrated Environmental Compliance Planning."

9 For example, State of Mississippi (2012). *Energy Works: Mississippi's Energy Roadmap.* Jackson, MS: Office of Governor Phil Bryant. See http://www.governorbryant.com/wp-content/uploads/2012/10/Energy-Works-Roadmap-Final.pdf.

much of this requirement through these areas alone. States with many fossil-fuel power plants, however, may want to first focus on cost-effective heat-rate improvements and re-dispatch to increase the capacity factor of their natural gas plants. Each state is different, and the long compliance window for 111(d) suggests that states can develop groups of measures based on their ability to reduce GHG emissions over the short-, medium-, and long-term.

10. **Eliminate "silos" that segregate multiple pollutants (e.g., CO_2, SO_2, NO_x) and media impacts (e.g., air, water, waste).** The same measures and programs that a state uses to meet its 111(d) obligations can also satisfy additional air quality requirements for ozone, particulate matter, or other pollutants. Based on the recommendation of its Clean Air Science Advisory Committee (CASAC), EPA is expected to propose a more stringent National Ambient Air Quality Standard (NAAQS) for ground-level ozone in 2015. States can identify potential measures that provide CO_2 reductions for 111(d) purposes, and that simultaneously reduce SO_2 and NO_x emissions. Such multi-pollutant approaches can add value to existing EE and RE programs, because they help states avoid nonattainment designation when new ozone or fine particle NAAQS or regional haze requirements are established.[10] In addition, many states are encountering serious water quantity and quality concerns—issues that are likely to worsen with climate change. The water impacts and risks of supply-side and demand-side options—which vary markedly—can also be integrated into overall 111(d) planning.

Navigating the Road Ahead

Major new EPA rule proposals are subject to a rush to judgment from interested parties: too stringent, not stringent enough; too little flexibility, too much; etc. State officials, however, will be best served by doing what they do best: undertaking expeditious planning — including the specific steps above — with an eye toward the underlying considerations that are often overlooked. For example:

This is a marathon, not a sprint. EPA's proposed 111(d) rule may represent the starting gun, but the finish line remains far away. EPA still plans to finalize a 111(d) rule in June 2015. States will then have one year to submit compliance plans, two years if involved in a multi-state approach, and may seek a one-year extension in either case. So the earliest deadlines for states are two to three years away, and EPA could issue additional extensions. EPA's approval of state compliance plans could also suffer extended delays given the complexity and variety allowed under the proposed rule. EPA leapt forward in quantifying the emissions benefits of EE and RE with its *Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans*,[11] but its tools remain inadequate to provide quick, accurate 111(d) approvals. Multi-state plans, which EPA favors, will require even more sophisticated review.

The time is ripe for "no regrets" measures. Some of the most cost-effective measures states can take – like EE — will also assist with 111(d) compliance. But they take time to bring to scale, especially when EM&V programs also need to be established. Getting started on such programs — even before the 111(d) rule is finalized — can position states for easier compliance and reduced costs. Further, EE reduces all pollutants not just GHGs, so NAAQS nonattainment and regional haze risks diminish as well. The EPA's proposal calls for a 30 percent GHG emission reduction from 2005 by 2030, and emissions are already down 14 to 16 percent due to other factors. Thus, on average states will need to reduce GHG emissions approximately one percent per year for the next 15 years. Some states are already reducing electricity demand by 2 percent or more per year through EE. Their early, "no regrets" adoptions will position them well to comply with 111(d).

EPA's requests for comments signal opportunity. Throughout the proposed rule, EPA has requested comments from states and interested parties. This is

10 See for example, *Integrated, Multi-pollutant Planning for Energy and Air Quality,* an approach to air quality management that merges IRP principles used in the energy sector with addressing air pollution on a multi-pollutant basis. James, C. and Kenneth Colburn (2013). *Integrated, Multi-pollutant Planning for Energy and Air Quality.* Montpelier, VT: Regulatory Assistance Project. See www.raponline.org/document/download/id/6440.

11 U.S. EPA. (2012). *Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans.* Research Triangle Park, NC: Office of Air Quality Planning and Standards. See http://epa.gov/airquality/eere/manual.html.

because EPA is working through the same questions that states face: how best to maximize flexibility and environmental integrity while minimizing cost and bureaucracy. States can consider EPA's requests for comments as opportunities to identify and recommend better ways for the agency to implement 111(d) program elements. Take advantage of this opportunity; there is no downside.

An Unprecedented Opportunity to Improve Regulatory Efficiency

EPA's 111(d) proposal breaks new ground by directly integrating energy and environmental policy and provides unprecedented compliance flexibility. However, changes in states' energy and environmental regulatory infrastructures and historical practices will be necessary to take full advantage of this opportunity to pursue state-specific, cost-effective approaches.

Morphing the traditional practice of air regulation and utility regulation into the broad new permissiveness reflected in the proposed 111(d) rule may, in fact, be more difficult for EPA, its regional offices, and state environmental and energy regulators than it will be for the regulated community to actually comply with the rule.

As such, states may look back on 111(d) as having spurred an overdue re-thinking of utility and environmental regulation as separate and distinct government functions. Ideally, it will foster the creation of a more integrated, streamlined, and economically-efficient approach to both.

Additional Resources

Center for Climate and Energy Solutions (2014). Carbon Pollution Standards. See http://www.c2es.org/federal/executive/epa/carbon-pollution-standards-power-plants.

Center for the New Energy Economy (2014). *A State Planning Guide for Clean Air Act Section 111(d).* Fort Collins, CO: Colorado State University. See http://cnee.colostate.edu/graphics/uploads/CNEE_CAA-Section-111d-State-Planning-Guide-6_2014.pdf.

Farnsworth, D. (2014). *Further Preparing for EPA Regulations.* Montpelier, VT: Regulatory Assistance Project. See http://www.raponline.org/document/download/id/6989.

Farnsworth, D. (2014). Complying With 111(d): Exploring the Cap-and-Invest Option. Reston, VA: *Public Utilities Fortnightly.* See http://www.raponline.org/document/download/id/7007.

Georgetown Climate Center (2014). *State-by-State Resources to Better Understand EPA's Carbon Pollution Rule.* See http://www.georgetownclimate.org/state-by-state-resources-to-better-understand-epas-carbon-pollution-rule.

Gillenwater, M. (2014). *Primer on the New U.S. Regulation on GHG Emissions for Carbon Professionals.* GHG Management Institute. See http://ghginstitute.org/primer-on-the-new-u-s-regulation-on-ghg-emissions-for-carbon-professionals/#more-6122.

Lazar, J. and Ken Colburn (2013). *Recognizing the Full Value of Energy Efficiency.* Montpelier, VT: Regulatory Assistance Project. See http://www.raponline.org/document/download/id/6739.

Shenot, J. (2013). *Quantifying the Air Quality Impacts of Energy Efficiency Policies and Programs.* Montpelier, VT: Regulatory Assistance Project. See http://www.raponline.org/document/download/id/6680.

Tarr, J.M. and Sarah K. Adair (2014). *The EPA's Proposed Guidelines for Regulating Carbon Dioxide Emissions from Existing Power Plants.* Durham, NC: Nicholas Institute for Environmental Policy Solutions, Duke University. See http://nicholasinstitute.duke.edu/sites/default/files/publications/ni_pb_14-01.pdf.

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