



Energy Program

Energy Project

Greenhouse Gas Regulation of Existing Power Plants Under the Clean Air Act: Key Themes Emerging from the Bipartisan Policy Center's Workshop Series

Introduction

The Bipartisan Policy Center (BPC) and the National Association of Regulatory Utility Commissioners (NARUC) hosted a series of three public workshops in 2013 and 2014 to explore the challenges and opportunities of regulating greenhouse gases (GHGs) from existing power plants under section 111(d) of the Clean Air Act. The workshops provided a forum for a variety of stakeholders to explore this theme. Speakers included U.S. Environmental Protection Agency (EPA) officials, state public utility commissioners, state environmental officials and advisors, power company

executives, technology providers, regional transmission organizations, environmental organizations, and other experts. The first workshop, held on September 25, 2013, provided an overview of the challenges and opportunities presented by §111(d) regulation. The second workshop, held on December 6, 2013, explored policy design options and economic modeling of the impacts of potential regulatory scenarios. The third workshop, held on April 7, 2014, looked at existing state, regional, and company efforts to reduce GHG emissions from the power sector as well as the possibility for multistate cooperation. All three events were held in Washington, D.C.

Key Themes

Over the course of the three workshops, approximately 50 experts and stakeholders took to the stage to discuss the EPA's forthcoming GHG regulation. While each person brought their own unique perspective to the discussion, several key themes reverberated throughout the events. The themes, which will be explored below, include:

The Importance of "Getting it Right": Regulation of GHGs from existing power plants under section 111(d) is new and complex. Implementation has the potential to both significantly impact the electricity sector as well as complement and expand on trends modernizing the sector. As a result, the §111(d) rulemaking has received the attention of a broad array of stakeholders who recognize the importance of an EPA rule that "gets it right."

State Variability: There are significant differences among states that impact how state leaders and other stakeholders are approaching a §111(d) rulemaking. This includes differences in states' historic generation mix, electricity demand profile and trajectory, participation in electricity market coordination with other states, and existing programs and efforts to reduce GHG emissions. A §111(d) regulation will be imposed on this diverse landscape and influence future energy policy in the states. As a result, stakeholders asked that the EPA's guidance on the "best system of emission reduction" reflect the successes at the state, regional, and company level, where efforts to reduce GHG emissions in the power sector are already underway.

Flexibility: Stakeholders repeatedly called for flexibility in the implementation of a §111(d) regulatory program. The broad request reflected many concerns, including a



desire that: differences between states are recognized, lowest-cost compliance pathways are available, different policy designs are allowed, the timing of compliance reflects needs of states and the long-term nature of power sector infrastructure investments, and there is a means to recognize early action.

Power Sector Changes: Independent of a §111(d) regulation, the power sector is undergoing significant changes that are altering the traditional resource mix and utility business model. The changing landscape is being driven by low natural gas prices, increased renewable energy penetration, increased demand-side energy efficiency, and flat demand growth. Stakeholders discussed the state of the electricity sector as well as the potential for §111(d) regulation to drive further transition.

Uncertainty in the Power Sector: There are significant uncertainties that will influence the implementation of a §111(d) regulation including the price of natural gas, the future of the existing nuclear fleet, the cost trajectory for building new generation, the role of technology innovation, the future of national- and state-level GHG policies, and the deployment of energy storage and distributed generation.

Affordability and Reliability: Stakeholders generally agreed that in a post-§111(d) world, they want to continue to ensure affordable and reliable electricity for all customers.

Energy Efficiency: Energy efficiency was highlighted for its potential to provide a low-cost compliance option. Speakers discussed states' growing success implementing efficiency programs. However, speakers also reflected upon the challenges of measuring and verifying energy savings and resulting emission reductions as well as integrating efficiency into a §111(d) framework.

Collaboration: "Collaboration" was a key buzzword in the §111(d) discussions. Many types of collaboration were discussed, including collaboration: among states, within power market regions, among state officials, and between stakeholders and the EPA.

Kateri Callahan, President of the Alliance to Save Energy, and Asim Haque, Commissioner with the Public Utilities Commission of Ohio, at the April 7, 2014, workshop.



Overview of Section 111(d) of the Clean Air Act

Under the authority of the Clean Air Act and the direction of the president in his 2013 Climate Action Plan, the EPA is proposing a series of rulemakings to regulate carbon dioxide emissions from new, modified, and existing power plants. The BPC-NARUC workshops focused on the forthcoming regulation of existing power plants under section 111(d) of the Clean Air Act.¹ President Barack Obama laid out the path forward for these regulations in his 2013 Climate Action Plan and accompanying presidential memorandum. The president calls for the EPA to propose guidelines to states for regulation of existing power plants under section 111(d) in June 2014 and to finalize the guidelines in June 2015.

“We’re holding our own feet to the fire, and this shows just how serious the president is about moving the ball down the field.”

—Heather Zichal, then deputy assistant to the president for energy and climate change



Lisa Edgar, First Vice President of the National Association of Regulatory Utility Commissioners and Florida Public Service Commissioner; Kathy Kinsey, Deputy Secretary of the Maryland Department of the Environment; Tom Curry, Vice President of MJ Bradley & Associates; and Robert Wyman, Partner at Latham & Watkins, at the December 6, 2013, workshop.

“Section 111(d) is quite broadly written. There’s not a lot of experience with it and no court decisions evaluating how to interpret it.”

—Kyle Danish, partner with Van Ness Feldman

Section 111(d) of the Clean Air Act relies on federal-state collaboration. Joseph Goffman, senior counsel to the assistant administrator of the EPA, said, “111(d), perhaps not uniquely, but distinctively, puts states at the fore in developing the framework where the rubber will meet the road for the regulated community.” States are to follow EPA guidelines in developing a state plan for implementing §111(d) performance standards for existing sources. President Obama’s timeline gives states 13 months to submit a state plan to the EPA for review. According to the Clean Air Act, if a state fails to submit a satisfactory plan, the EPA has authority to issue a federal plan for that state. Sue Tierney, managing principal at the Analysis Group, described the state-federal relationship under §111(d), saying the EPA is plugging in the points on the GPS and the states are figuring out where to go.

Under section 111(d), the EPA is to provide guidance on the “degree of emission limitation achievable” through the application of the “best system of emission reduction” that is “adequately demonstrated” and takes into account costs and other factors. Because this section of the Clean Air Act has been used infrequently, relies on an assessment of several factors, and is not overly prescriptive regarding the level of emission reduction, there has been speculation regarding what the EPA will propose as the “best system of emission reduction.” For example, in evaluating the “best system of emission reduction,” it is not clear whether the EPA will look solely to emission-rate reduction measures available at each electric generating unit or will take a broader system-based view that includes additional reduction options, such as increased dispatch of lower-emitting generators and reduced demand from offsite energy efficiency. Will the EPA propose an emission-rate standard, a mass-based emission standard, or provide a pathway for both options? How will energy efficiency, renewable energy, and other outside-the-fence measures be treated in a §111(d) regime? Over what compliance

timeframe will emissions performance be assessed? The three workshops allowed stakeholders to address these questions, and many more, as well as publically weigh in on what they want and don't want to see from EPA guidelines and state implementation.

The Importance of “Getting it Right”

Stakeholders recognize that the forthcoming §111(d) regulation could have significant impacts on the electricity sector, and therefore, it is important for the EPA to “get it right.” This section of the Clean Air Act has been used infrequently and has never been applied to GHG emissions. These factors have intensified concerns, hopes, and interest in the forthcoming rule. In his December 6, 2013, keynote address, Former EPA Administrator William Reilly told audience members that engagement was a good way for stakeholders to respond to the unprecedented nature of the regulation. “This is a case where the train will leave the station whether we are on it or not. ... Action is inevitable,” Reilly said. “Therefore, it's wise for all of us to engage early and try to influence that action in ways that work for everyone.”

Many stakeholders agreed with Reilly's call to “engage early.” About 50 people spoke at the three events, including high-level government officials, private-sector executives, and nonprofit leaders. Keynote addresses were given by Heather Zichal, assistant to the president for energy and climate change; William Reilly, former EPA administrator; Colette Honorable, president of NARUC; and Gina McCarthy, EPA administrator. Roughly 750 people attended the three workshops and more than 260 more tuned in to watch the events live via webcast on the BPC website.² The events generated about 45 news stories in the mainstream and trade press.

“Clearly this is an important rule. It needs to be incredibly smartly crafted ... to make that sure it provides the flexibilities that states need while we are continuing to provide the impetus for carbon pollution reductions we need.”

—Gina McCarthy, EPA administrator

State Variation

There are key differences among the states that influence how they are positioned to implement a §111(d) program for carbon dioxide emissions from existing power plants. There is diversity in the historic generation mix, with varying reliance on fossil fuels and renewable energy sources. States that generate a higher percentage of their electricity from fossil fuels and, in particular from coal-fired generators, are expected to face more of an impact than states with substantial nuclear or renewable energy generation. Some areas of the country have better access to renewable resources, such as low-cost wind energy. Many states have nearly flat or declining electricity demand, while some states are expecting growth in their demand for electricity. In many states, but not all, electricity markets are operated by regional transmission organizations or independent system operators. And states vary widely on the programs and efforts already in place to reduce GHG emissions. As a result, states broadly have asked the EPA to consider these differences in the §111(d) rulemaking.

“States are already moving us into renewable energy and energy efficiency, making decisions in integrated resource plans about the future of coal production in their state. And it's happening all over the country.”

—Jon Brekke, vice president of Great River Energy

That request was echoed by many state officials at the BPC-NARUC workshops. The speakers highlighted what was unique about their states as well as the state-specific efforts that they could utilize in §111(d) compliance.

At the September 25, 2013, workshop:

Ellen Anderson, Minnesota's senior advisor to the governor on energy and environment, discussed the portfolio of state GHG-reducing programs that are helping Minnesota meet its economy-wide GHG goal. This includes a renewable portfolio standard, energy efficiency standards, and a law limiting new coal generation in the state.³



Senator Byron Dorgan (ret.), Senior Fellow at the Bipartisan Policy Center, and Robert Kenney, Chair of the National Association of Regulatory Utility Commissioners Committee on Energy Resources & Environment and Chairman of the Missouri Public Service Commission, at the September 25, 2013, workshop.

Vinson Hellwig, air division chief for the Michigan Department of Environmental Quality, said his state is on track to meet its renewable energy and energy efficiency goals. In addition, he said he expects some of the older coal plants in Michigan to retire in coming years and he would like the EPA to give the state credit for those retirements.

Philip Jones, then NARUC president and commissioner for the Washington Utilities and Transportation Commission, said Washington and the northwestern United States in general have significant hydro, wind, and nuclear power, which could all help with compliance with a §111(d) rulemaking.

Robert Kenney, chairman of the Missouri Public Service Commission and chair of NARUC's Committee of Energy Resources and Environment, said Missouri requires its utilities to value demand-side resources, such as energy efficiency, on par with supply-side resources. He said he wants Missouri to be able to take credit for its cost-effective energy efficiency investments.

"The more we can talk about this issue regionally, the better off we will be."

—Libby Jacobs, chair of the Iowa Utilities Board

At the December 6, 2013, workshop:

Lisa Edgar, first vice president of NARUC and commissioner for the Florida Public Service Commission, highlighted the portfolio of investments in Florida that have led to decreases in GHG emissions, including demand-response programs and energy efficiency investments.

Kathy Kinsey, deputy secretary for the Maryland Department of the Environment, said her state plans to comply with §111(d) through its participation in the Regional Greenhouse Gas Initiative (RGGI), a regional cap-and-trade program in the northeastern United States.

John Lyons, Kentucky's assistant secretary for climate policy, said his state adopted an energy plan in 2008 that includes GHG-reduction goals. He said many of the state's older coal-fired power plants will retire in coming years and that natural gas is poised to replace much of this capacity, especially if the state does not remove its ban on nuclear power.

At the April 7, 2014, workshop:

Libby Jacobs, chair of the Iowa Utility Board, said she expects Iowa's wind-energy investments to play a role in the state's §111(d) compliance plan. Iowa was the second-largest wind-generating state in the United States in 2013.

Asim Haque, commissioner for the Public Utilities Commission of Ohio, said he hopes his state's energy efficiency investments will count toward compliance.

Colette Honorable, chairman of the board and president of NARUC and chairman of the Arkansas Public Service Commission, highlighted her state's investments in energy efficiency and said, in general, energy efficiency programs should be held up as an example of the "best we have to offer."

Jeanne Fox, commissioner for the New Jersey Board of Public Utilities, said she was confident that existing state GHG-reducing policies and existing low-carbon generation, such as nuclear, will put New Jersey in a good place for §111(d) compliance.

Greg White, commissioner for the Michigan Public Service Commission, highlighted the state's investments in renewable energy and energy efficiency, but also noted that he expects his state to be capacity short by the time the §111(d) regulation is in place.

Collin O'Mara, then-secretary of the Delaware Department of Natural Resources & Environmental Control, highlighted his state's participation in RGGI, which has been yielding GHG reductions in the Northeast for several years.

Flexibility

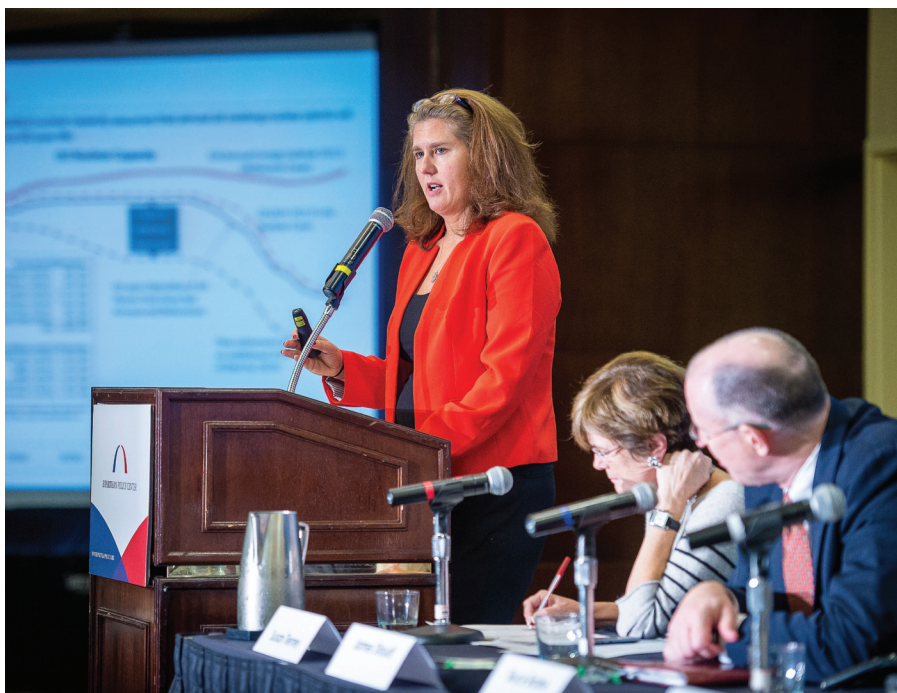
The call for "flexibility" was the most repeated theme at the three-workshop series. Stakeholders used this word to reflect a range of issues, such as a desire that (1) differences among states are recognized, (2) lowest-cost compliance pathways are available, (3) different policy designs are allowed, (4) timing allows for state response and reflects the long-term nature of power sector infrastructure investments, and (5) early action is accounted for in the regulation.

"The challenge that you've given to us is be as flexible as possible, but that doesn't mean it's going to be so flexible that [you] won't be able to rely on this as a federally enforceable rule to deliver carbon pollution reductions at the level that our guidance indicates."

—Gina McCarthy, EPA administrator

Recognize state differences: State and utility representatives asked for flexibility to incorporate existing state and industry programs into a §111(d) compliance plan

Kathleen Barron, Senior Vice President of Exelon, at the December 6, 2013, workshop and Ellen Anderson, Minnesota's Senior Advisor to the Governor on Energy & Environment, at the September 25, 2013, workshop.



and to reflect the state's current emissions profiles. Ellen Anderson, Minnesota's senior advisor to the governor on energy and environment, summed up the sentiment at the September 25, 2013, workshop when she said: "We need EPA, as they move forward with this, to support the work that we're doing. That's really what I think you'll hear from every state."

Lowest-cost compliance pathways: Many stakeholders asked the EPA to provide enough flexibility to allow states and companies to take advantage of their least-cost compliance options. These options vary state by state, company by company, and over time. A flexible approach would allow states and companies to utilize the lowest cost means of achieving a required outcome. Stakeholders discussed a range of low-cost pathways, including energy efficiency programs, increasing generation from natural gas, and multistate collaborations. For example, Secretary Collin O'Mara of Delaware and Deputy Secretary Kathy Kinsey of Maryland, both said regional cap-and-trade through RGGI was the least-cost compliance option for their states. They noted the benefits of shared administrative costs and the advantages of tapping into a larger market to secure reductions, including reductions from demand response and energy efficiency. Chuck Barlow, vice president for environmental strategy and policy at Entergy Services Inc., said low natural gas prices have allowed his company to increase its gas generation to help meet a companywide GHG standard. He said finding low-cost compliance options will be key to keeping customer bills from rising too high and putting pressure on the many Entergy customers that live below the poverty line. Others zeroed in on energy efficiency and urged the EPA to allow it to play a role. For example, Gene Rodrigues, vice president at ICF International, said energy efficiency could be tapped as a resource, as many states and utilities already do. He said that the state-level experience has provided a set of best practices that should be consulted as people consider efficiency in their §111(d) compliance plans.

Policy Design: Workshop participants expressed interest in various §111(d) policy design options that could be used in state implementation plans. This included interest in tradable emission-rate programs, state and company portfolio approaches, emission budget-trading programs, carbon-price approaches, and multistate programs. Many speakers, regardless of their design preference, said they hope the EPA allows for power plants to trade or average to meet the standard. Tom Curry, vice president for MJ Bradley and Associates, summed up his preference for market-

based solutions, saying, "They allow regulated facilities to find the most cost-effective compliance strategies."

Some stakeholders proposed an emission-rate standard, where compliance would be assessed based on the amount of carbon dioxide released for each megawatt hour of electricity produced. For example, Steven Corneli, senior vice president for NRG Energy, and Robert Wyman, a partner at Latham and Watkins, discussed a proposal by the National Climate Coalition that calls for fuel-specific emission-rate standards. They said the EPA should allow interstate trading to meet the limits. In addition, they said the EPA could include guidance on how states could incorporate other compliance options, such as energy efficiency, into their plans or create equivalent mass-based programs. The Natural Resources Defense Council's (NRDC) §111(d) proposal, as described by David Doniger, NRDC's policy director for the Climate and Clean Air Program, and Daniel Lashof, NRDC's director for the Climate and Clean Air Program, also called for the EPA to set an emission-rate standard. The proposal takes into account states' generating portfolios when setting a state-by-state standard as well as the emission reductions that could be achieved system wide, including reductions achieved using demand-side energy efficiency. Lashof said NRDC is supportive of mass-based standards as well.

Several speakers said they were interested in mass-based plans, where compliance would be based on the tons of carbon dioxide emitted. For example, Bruce Braine, vice president for strategic policy analysis at American Electric Power (AEP), said a mass-based program would be less complicated than alternative design options. "It's the most direct, simplest way to do it, and it does everything on an equal playing field," he said. In an overview of many potential compliance options, Vicki Arroyo, executive director of the Georgetown Climate Center, described several ways that a mass-based program could work. In addition to a RGGI-like cap-and-trade model, Arroyo described a portfolio approach, where existing state policies could contribute to a state or multistate emissions cap. "A rigorous portfolio approach would allow states and firms to get credit for what they are already doing and to make adjustments to achieve the necessary emissions," she said. Several state leaders, such as John Lyons, Kentucky's assistant secretary for climate policy, said they are considering how a mass-based compliance plan could work for their states.

Others suggested the EPA should allow both rate-based and mass-based compliance options. Bruce Phillips, director of

the NorthBridge Group, proposed a hybrid plan in which coal-fired generators would be subject to a mass-based performance standard and natural gas-fired generators would be subject to an emission-rate standard. Phillips said his group's analysis has shown that this hybrid approach stands up well when compared with other design options, achieving similar emission reductions but with less impact on electricity rates.

Finally, several stakeholders considered the challenges and opportunities of multistate or regional collaboration. Those proposals will be explored later in this document.

Timing: Two distinct aspects of timing flexibility were discussed at the workshops; the first relates to the deadline for submitting state plans to EPA, and the second relates to the timing of required emission reductions. President Obama laid out an ambitious timeline for §111(d) compliance, suggesting states would have 13 months to submit an implementation plan to the EPA after the

should adopt a policy that accounts for the long-term nature of infrastructure investments. For example, Kimberly Greene, president and CEO of Southern Company Services, Inc., said her company has invested billions of dollars in recent years to retrofit existing coal plants to comply with air-quality standards. She said she hopes these plants will remain in the company's fleet for years to come. "That is an investment that we are counting on being able to recover over a period of time," Greene said.

Early Action: States and companies that have already made investments to reduce GHG emissions said they want the EPA to provide the flexibility needed to allow these investments to count toward §111(d) compliance. States cited a range of early actions, including adoption of renewable portfolio standards, energy efficiency standards, and other clean energy legislation. Companies also pointed to new, cleaner investments driven by these state policies as well as economics, such as natural gas, wind, and solar investments.



John Lyons, Kentucky's Assistant Secretary for Climate Policy, at the December 6, 2013, workshop.

final regulation is published in June 2015. Several state officials said they may need additional time to craft a plan and, in some cases, get the plan approved by their state legislatures. For example, Greg White, a commissioner with the Michigan Public Service Commission, suggested three years may be a more reasonable timeline for getting plans approved by states. Gina McCarthy, administrator for the EPA, said section 111(d) is not very well defined, which leaves open the possibility for flexible compliance timelines. "There is enormous flexibility in the definition of a state plan and our ability to look at the timeline for achieving that," she said. Industry executives also commented on the timing of compliance requirements, saying the EPA

Power Sector Changes

The power sector is undergoing significant changes that are impacting the traditional resource mix and utility business model. Although a §111(d) regulation has the potential to drive further transition, it is being imposed upon a dynamic landscape driven by low natural gas prices, increased renewable energy penetration, increased energy efficiency, and flat demand growth. Many speakers wove a discussion of the changing industry into their remarks about §111(d) regulation.

"You would certainly hope ... the reality of the carbon trajectory in this country could be reflected in and encouraged in the design of these standards."

— Megan Ceronky, attorney with the Environmental Defense Fund

Several company executives described how changes in the power sector have impacted their generating portfolios. This included: Robert Balzar with the Tennessee Valley Authority, who highlighted a switch away from coal-fired generation toward wind, solar, and gas-fired generation; Pamela

Faggert with Dominion, who highlighted a decrease in their fleet's carbon intensity as coal plants shut down or refuel and more renewable generation came online; Bruce Braine with AEP, who said the company has added 5,000 megawatts of new natural gas and more than 2,000 megawatts of renewable generation over the last 12 years as well as reduced about 1,000 megawatts of demand through energy efficiency; and Chuck Barlow with Entergy Services Inc., who said low gas prices have helped the company meet its GHG cap of 20 percent below 2000 levels.

"The changes are real, they're happening, and they're probably happening faster than our more staid industry can absorb. It's going to be a real test of agility for all of us in the electric utility industry."

—Robert Balzar, principal consultant for the Tennessee Valley Authority

State leaders also remarked on how the changing sector was reflected in their states. For example, John Lyons, Kentucky's assistant secretary for climate policy, said Kentucky got 92 percent of its electricity from coal-fired generators in 2012. However, many of the state's coal plants are aging. Lyons said state-run economic models show that as these older coal plants retire, natural gas generation, fueled by low-cost gas, will replace coal in the state, absent the §111(d) regulation. "If no other regulations were passed, if no GHG regulations were promulgated, we would look at being all natural gas by, basically, 2050," Lyons said.

Finally, technology providers discussed the changing sector. Tom Vinson, vice president for federal regulatory affairs with the American Wind Energy Association, said their latest assessment shows 61,000 megawatts of wind deployed in 39 states and Puerto Rico. He said the penetration numbers reflect the fact that wind energy has become more economic to deploy. Donald Ryan, manager of advanced technology development at Babcock and Wilcox Power Generation Group, said many other technologies may become economic in a carbon-constrained world. He said his company works to research and develop those options.



David Conover, Managing Director of Grayling, and Robert Balzar, PE, Principal Consultant at Tennessee Valley Authority, at the April 7, 2014, workshop.

Uncertainty in the Power Sector

It is always a challenge to predict the future, and predicting the future of the power sector is no exception. There are significant uncertainties in market conditions and other key factors that will influence §111(d) implementation, including the price of natural gas; the future of the existing nuclear fleet; the cost trajectory for building new energy generation, including renewables, nuclear, and advanced coal with carbon capture and storage; the role of technology innovation; the future of national- and state-level GHG policies; and the deployment of energy storage and distributed generation.

Significant deviations from today's projections on any of these factors could impact the cost and/or effectiveness of a §111(d) program. For example, Dallas Burtraw, senior fellow and Darius Gaskins chair at Resources for the Future, said his modeling shows that the Clean Air Act can be used to get the United States "within striking distance" of the president's Copenhagen pledge, which calls for a 17 percent reduction of GHG emissions from 2005 levels by 2020. A significant part of that calculus involved what Burtraw called "secular trends," which includes the increased use of natural gas due to low natural gas prices and the flat electricity demand due, in part, to increased utilization of energy efficiency.

Kathleen Barron, senior vice president at Exelon, focused on interactions between the future of nuclear power and a §111(d) program. She said nuclear power plants are currently retiring, not because of regulation from the EPA, but because of the competition from low natural gas prices,



Gina McCarthy, Administrator of the U.S. Environmental Protection Agency, at the April 7, 2014, workshop.

the flat electricity demand, and the absence of a carbon price. Barron said if nuclear plants continue to retire at this rate, the United States will have trouble meeting its climate goals. “We haven’t seen the end of the so-called downsizing of America’s nuclear fleet,” she said. She asked states to support nuclear in their implementation plans by treating all carbon-free generating sources equally and reviewing their plans to look for unintended consequences.

Finally, James Staudt, principal owner of Andover Technologies Partners, said uncertainty about the future regulatory environment is one factor that will guide utilities’ compliance decisions. He said utilities will look for cost-effective options, which will vary from plant to plant, including converting to or co-firing natural gas and investing in on-site heat rate improvements. “People are going to look at some low-cost solutions that give them some optionality down the road because no one wants to make a big capital commitment that may not be recovered,” he said.

Affordability and Reliability

Stakeholders generally agreed that a §111(d) regulation should not get in the way of providing affordable and reliable electricity to utility customers. Stakeholders addressed this from a range of perspectives. Many of the state public utility commissioners talked about these goals as part of

their mission as economic regulators. For example, Robert Kenney, a commissioner from Missouri, said “Our charge as state public utility regulators is to ensure that these regulations do not adversely affect the reliable delivery of essential services and that rates charged to consumers are just and reasonable.” Other state officials and company executives highlighted the importance of affordability by discussing the ability of their state constituents or electricity customers to pay for new, cleaner investments.

While reliability and affordability were primarily discussed as overarching themes to guide the rulemaking process, some concrete suggestions for translating these values into

“As state regulators, we have been charged with protecting the reliability for our consumers, and for me, that’s really what it’s all about.”

—Asim Haque, commissioner for the Public Utilities Commission of Ohio

practice were offered. For example, many said that having the flexibility to employ least-cost compliance options would help to keep costs down for rate payers and companies. In

addition, Paul Sotkiewicz, chief economist with PJM Interconnection, said reliability could be enhanced if market operators had the ability to delay proposed plant retirements, on a case-by-case basis, if their retirement would threaten reliability.

Energy Efficiency

Many stakeholders highlighted the potential for demand side energy efficiency to provide a low-cost compliance option. Speakers discussed states' growing success implementing efficiency programs, through energy efficiency resource standards and other state-led efforts. Diane Munns, senior director of the Environmental Defense Fund's Clean Energy Collaboration, said many people do not realize that there has been significant experience running energy efficiency programs and tracking energy savings at the state level. "We understand what kind of savings these measures produce and the perseverance for those measures, and I think that's a message we need to be bringing forward, which is, we know how to do this and it's based on best practices," she said. Kateri Callahan, president of the Alliance to Save Energy, said many energy efficiency advocates are hopeful that energy efficiency will play a key role in §111(d) compliance and drive deployment of energy efficiency on a national scale.

Speakers also reflected upon the challenge of accurately and consistently measuring and verifying emission reductions from energy efficiency as well as integrating efficiency into a §111(d) framework. Some noted that a mass-based system inherently accounts for reductions in electricity demand without the need for a separate accounting of energy efficiency and an estimation of emissions reduced from displaced electricity generation. Under such a program, mass emissions (i.e., tons or pounds of carbon dioxide emitted from electric generating units) are measured and compared against the emission budget standard. When successful energy efficiency efforts reduce electricity demand, the emission reductions are thus reflected in the measured emissions of the generator(s) that reduce their electricity output. Sec. Collin O'Mara of Delaware noted, "Some sort of mass-based approach makes sense because the accounting is so much easier." Speakers noted that a regional approach would help avoid complications when the energy efficiency measures in one state reduce emissions from generators in another state. "You have a problem of who gets to take credit for that [emission reduction] and how do you apportion out

those reductions between these two states that are both contributing, in their own way, to a reduction of emissions," said Kathy Kinsey, deputy secretary for Maryland Department of the Environment.

"We can do a lot with energy efficiency and do it in a way that is cost efficient for our consumers and allow[s] the states to meet their obligations."

*—Gene Rodrigues, vice president
of ICF International*

Crediting demand side energy efficiency under an emission-rate program design would require evaluation, measurement, and verification methods to determine the energy saved and estimate the associated emission reductions from displaced electricity generation. Melissa Lavinson, vice president of federal affairs with PG&E, said her company's work in California could provide one model for how to accomplish this. She said that over the past 30 years, energy efficiency has eliminated PG&E's need to build 30 natural gas plants. "That's a lot of carbon taken off the table," she said. Despite individual state successes, many noted that getting all states to agree to a uniform standard for measuring and verifying efficiency will be difficult. Asim Haque, a commissioner with the Public Utilities Commission of Ohio, said many states will want to utilize the state protocols they already have place. "We request that the EPA be deferential to states that have programs in place and have been performing [evaluation, measurement, and verification] for some years now," he said. Gene Rodrigues, vice president for ICF International, said finding a perfect solution to the problem should not stand in the way of allowing good energy efficiency programs to contribute to §111(d) compliance.

While many stakeholders held up energy efficiency as a potential low-cost compliance option, not everyone agreed on how much efficiency projects will cost utilities and customers going forward. The cost projections are important when anticipating how much energy efficiency will likely come online. For example, economic modeling presented by Dan Lashof of NRDC at the December 6, 2013, workshop assumed utilities would pay between 2.3 and 3.5 cents per kilowatt-hour for energy efficiency programs. At

that rate, there was high uptake of efficiency investments in their core policy scenario. Alternatively, modeling presented by Paul Bailey of the American Coalition for Clean Coal Electricity (ACCCE) assumed a higher cost for energy efficiency projects, with utilities paying about 11 cents per kilowatt-hour. In the ACCCE modeling, energy efficiency investments played less of a role in §111(d) compliance.⁴

Collaboration

Many stakeholders touched on the importance of collaboration in the context of §111(d) regulation. This included discussions about the importance of collaborating among states, within power market regions, among state officials, and between stakeholders and the EPA.

Stakeholders expressed varying degrees of interest in multistate and regional collaboration in §111(d) compliance. For example, Greg White, a commissioner with the Michigan Public Service Commission, gave his general support to exploring both state and regional opportunities. “There are tremendous opportunities at the regional level,” he said. “We should try to capitalize on those to the extent possible

while ensuring that we are not then precluding really good alternative options at the state level.” Other speakers fully embraced regional collaboration, and some shared plans for multistate compliance. This included discussion of RGGI as well as a plan for regional collaboration proposed by Jon Brekke, vice president of Great River Energy. Under the Great River Energy plan, a regional emission budget would be set and an adjustable regional carbon price would then be imposed to ensure that the participating states meet the emission limit. “By working together across state lines, you can benefit from events in other states,” Brekke said.

The need for intrastate collaboration was also explored. Crafting a §111(d) compliance plan will likely involve the work of many state agencies, including environmental officials, utility regulators, governors’ offices, and in some cases, state legislatures. In some states, these officials have a history of working together, while in other states, speakers said more effort is needed to foster these relationships. “We can be fairly silo-ed at times, between our energy office, our environmental regulators, and our public utility commissions, and I think that’s true in a lot of states,” said Doug Scott, the chairman of the Illinois Commerce

Vinson Hellwig, Air Division Chief at the Michigan Department of Environmental Quality, and Chuck D. Barlow, Vice President of Environmental Strategy & Policy at Entergy Services, Inc., at the September 25, 2013, workshop.



Commission. Part of the challenge is due to organizational structures. A handful of states, such as Kentucky, house their energy and environment officials in one agency. Many more states, however, house their environmental and energy offices in different agencies. For example, in Florida, public service commissioners are appointed by the governor and confirmed by the state Senate. Florida's Department of Environmental Protection is part of the executive branch. And, the state's Office of Energy is housed within the state's Department of Agriculture and Consumer Services, which is run by a state-wide elected official.

"We fully support [the U.S.] EPA allowing states the flexibility to coordinate with each other. Energy does not respect state lines. Power lines go across state lines, pollution goes across state lines, the regulation should also go across state lines."

— Pamela Faggert, chief environmental officer and vice president of Dominion

Finally, the EPA has reached out to many stakeholders during the pre-proposal window. During her keynote remarks, Administrator Gina McCarthy said her agency has accepted more than 300 meetings on §111(d). The BPC-NARUC workshops provided a large public forum for the EPA to continue to hear from key stakeholders and for these stakeholders to hear from the EPA.

Conclusion

The three-workshop series provided a forum for a public conversation about the opportunities and challenges presented by regulation of GHG emissions from existing power plants under section 111(d) of the Clean Air Act. The events brought together a diverse set of stakeholders, including state and federal officials, power company executives, technology providers, and environmental organizations. These stakeholders highlighted what they hope to see from the forthcoming EPA regulation, such as allowing flexibility and supporting reliable and affordable energy.

"We're looking forward to working continuously, constructively with EPA and our states as we move this debate forward."

—Kimberly Greene, president & CEO, Southern Company Services, Inc.

They discussed the dynamic energy sector that complicates predictions of what a post-§111(d) world will look like. And, they discussed how the rule could impact their states, companies, customers, and constituents. Stakeholders highlighted successful efforts underway in states and companies to reduce power sector carbon dioxide and interest in building upon these efforts through section 111(d) implementation.

"I really am hopeful that we will get it right."

—Jeanne Fox, commissioner with the New Jersey Board of Public Utilities

BPC is committed to continuing to work with stakeholders as the §111(d) rulemaking unfolds. This includes conducting analysis with economic modeling to support understanding of §111(d) compliance options and hosting future events that will delve into key issues surrounding this regulation.

Endnotes

1. Both new and modified electric generating units will be regulated under section 111(b) of the Clean Air Act. The EPA proposed new source performance standards in September 2013, replacing an earlier March 2012 proposal. The proposal for modified electric generating units is expected in June 2013, according to the President's Climate Action Plan.
2. The webcast statistics represent combined peak viewership from the December 2013 and April 2014 workshops. The September 2013 workshop was not webcast live.
3. The Minnesota energy law that prevents new energy facilities or imports of electricity from new facilities from increasing carbon dioxide emissions was ruled unconstitutional by a federal judge in April 2014.
4. In addition to differences in energy efficiency cost estimates, NRDC and ACCCE's modeling exercises differ in other noteworthy ways. For example, NRDC uses the Integrated Planning Model while ACCCE uses the NewERA model.

BPC-NARUC Workshop Series Speakers

Workshop 1: §111(d) GHG Regulation of Existing Power Plants

What Is It All About and How Will It Work?

September 25, 2013, Grand Hyatt, Washington, D.C.

Ellen Anderson, Senior Advisor to Governor on Energy & Environment, Minnesota

Vicki Arroyo, Executive Director, Georgetown Climate Center

Megan Ceronsky, Attorney, Environmental Defense Fund

Steven Corneli, Senior Vice President, NRG Energy

Kyle Danish, Partner, Van Ness Feldman

David Doniger, Policy Director, Climate and Clean Air Program, Natural Resources Defense Council

Chuck D. Barlow, Vice President, Environmental Strategy & Policy, Entergy Services, Inc.

Senator Byron Dorgan (ret.), Senior Fellow, Bipartisan Policy Center

Joseph Goffman, Senior Counsel to Assistant Administrator, U.S. Environmental Protection Agency

Kimberly Greene, President & CEO, Southern Company Services, Inc.

Jason Grumet, President, Bipartisan Policy Center

Vinson Hellwig, Air Division Chief, Michigan Department of Environmental Quality

Philip Jones, then-National Association of Regulatory Utility Commissioners President & Commissioner for the Washington Utilities and Transportation Commission

Robert Kenney, Chair, National Association of Regulatory Utility Commissioners Committee on Energy Resources & Environment, and Chairman, Missouri Public Service Commission

Joseph Kruger, then-Director for Energy and the Environment, Bipartisan Policy Center

Melissa Lavinson, Vice President of Federal Affairs, PG&E

John Lyons, Assistant Secretary for Climate Policy, Kentucky

Jennifer Macedonia, Senior Advisor, Bipartisan Policy Center

Heather Zichal, then-Deputy Assistant to the President for Energy and Climate Change

Workshop 2: §111(d) GHG Regulation of Existing Power Plants

Policy Design and Impacts

December 6, 2013, Marriott at Metro Center, Washington, D.C.

Paul Bailey, Senior Vice President, American Coalition for Clean Coal Electricity

Kathleen Barron, Senior Vice President, Exelon

Bruce Braine, Vice President for Strategic Policy Analysis, American Electric Power

Dallas Burtraw, Senior Fellow and Darius Gaskins Chair, Resources for the Future

Tom Curry, Vice President, MJ Bradley & Associates

Lisa Edgar, First Vice President of National Association of Regulatory Utility Commissioners and Florida Public Service Commissioner

Jason Grumet, President, Bipartisan Policy Center

Kathy Kinsey, Deputy Secretary, Maryland Department of the Environment

Joe Kruger, then-Director for Energy and Environment, Bipartisan Policy Center

Daniel Lashof, then-Director, Climate and Clean Air Program, Natural Resources Defense Council

John Lyons, Assistant Secretary for Climate Policy, Kentucky

Jennifer Macedonia, Senior Advisor, Bipartisan Policy Center

Bruce Phillips, Director, The NorthBridge Group

William Reilly, Former EPA Administrator; Co-chair, Bipartisan Policy Center's Energy Project; Advisory Board Chair, Nicholas Institute for Environmental Policy Solutions

Doug Scott, Chairman, Illinois Commerce Commission

James Staudt, Principal Owner, Andover Technology Partners

Susan Tierney, Managing Principal, Analysis Group

Robert Wyman, Partner, Latham & Watkins

Workshop 3: §111(d) GHG Regulation of Existing Power Plants

State, Regional, and Company Approaches to Reduce Power Sector GHG Emissions

April 7, 2014, Grand Hyatt Washington, Washington, D.C.

Margot Anderson, Executive Director, Energy Project, Bipartisan Policy Center

Robert Balzar, PE, Principal Consultant, Tennessee Valley Authority

Jon Brekke, Vice President, Great River Energy

Kateri Callahan, President, Alliance to Save Energy

David Conover, Managing Director, Grayling

Senator Byron Dorgan (ret.), Senior Fellow, Bipartisan Policy Center

Pamela Faggert, Chief Environmental Officer and Vice President, Dominion

Jeanne Fox, Commissioner, New Jersey Board of Public Utilities

Jason Grumet, President, Bipartisan Policy Center

Asim Haque, Commissioner, Public Utilities Commission of Ohio

Colette Honorable, Chairman of the Board and President, National Association of Regulatory Utility Commissioners, and Chairman, Arkansas Public Service Commission

Elizabeth (Libby) Jacobs, Chair, Iowa Utilities Board

Gina McCarthy, Administrator, U.S. Environmental Protection Agency

Diane Munns, Senior Director, Clean Energy Collaboration, Environmental Defense Fund

Collin O'Mara, then-Secretary, Delaware Department of Natural Resources & Environmental Control

Gene Rodrigues, Vice President, ICF International

Donald Ryan, Manager, Advanced Technology Development, Babcock & Wilcox Power Generation Group

Paul Sotkiewicz, Chief Economist, PJM Interconnection

Tom Vinson, Vice President for Federal Regulatory Affairs, American Wind Energy Association

Greg White, Commissioner, Michigan Public Service Commission

Acknowledgements

BPC would like to thank NARUC for co-hosting this workshop series and for all of the NARUC members who participated in the events, including: NARUC President Colette Honorable (AR), Former NARUC President Philip Jones (WA), Lisa Edgar (FL), Jeanne Fox (NJ), Asim Haque (OH), Elizabeth (Libby) Jacobs (IA), Robert Kenney (MO), and Greg White (MI).

About the BPC Energy Project

As the United States continues to emerge from a historic recession, energy has emerged as both a bright spot and a source of ongoing challenges for the nation's long-term prosperity and security. Such challenges include maintaining a clean, reliable, and secure electric power system; improving the environmental performance of natural gas production; devising cost-effective strategies to address climate change; nurturing energy innovation; and navigating the geopolitics of America's recent shale gas and tight oil boom. These challenges demand bipartisan solutions. BPC's Energy Project is committed to engaging with these issues and pursuing such solutions.

Founded in 2007 by former Senate Majority Leaders Howard Baker, Tom Daschle, Bob Dole and George Mitchell, the Bipartisan Policy Center (BPC) is a non-profit organization that drives principled solutions through rigorous analysis, reasoned negotiation and respectful dialogue. With projects in multiple issue areas, BPC combines politically balanced policymaking with strong, proactive advocacy and outreach.



BIPARTISAN POLICY CENTER

1225 Eye Street NW, Suite 1000
Washington, DC 20005
(202) 204-2400

WWW.BIPARTISANPOLICY.ORG