Testimony of Susan F. Tierney, Ph.D., Analysis Group, Boston
Before the U.S. House of Representatives
Committee on Energy and Commerce – Subcommittee on Energy and Power
Hearing to Examine EPA's Proposed 111(d) Rule for Existing Power Plants
and the Proposed Ratepayer Protection Act
April 14, 2015

Good morning, Chairman Whitfield, Ranking Member Rush, and Members of the Committee. My testimony focuses on the EPA's proposal for electric system reliability and impacts on consumers.

Clearly, having a reliable and efficient electric industry is critically important for Americans and for the U.S. economy. Americans demand world-class electric reliability at reasonable prices. The U.S., as the world's largest economy and the world's historically largest emitter of carbon pollution, is poised to take seriously its role in controlling such emissions. Fortunately, the EPA's proposed regulation allows flexibility that states can use to minimize impacts on consumers.

In two recent reports I co-authored, we found that:

- Many observers have raised concerns that EPA's proposal will jeopardize electric-system reliability. Such warnings are normal whenever there is major change in the industry and play an important role in focusing the attention of the industry on taking the steps to ensure reliable electric service to Americans.
- Given the significant shifts already underway in the electric system, the industry would need to adjust its operational and planning practices to accommodate changes even if EPA had not proposed its regulation. The reliability practices that the industry and its regulators have used for decades are a strong foundation from which any reliability concerns about EPA's regulations will be addressed.
- The Clean Power Plan provides states a wide range of compliance options and operational discretion that can prevent reliability issues while also reducing carbon pollution and compliance costs. Experience has shown that such approaches allow for seamless, reliable implementation of emissions-reduction targets. By contrast, many stakeholders' concerns about the Clean Power Plan presume inflexible implementation, are based on worst-case scenarios, and assume that policy makers, regulators, and market participants will stand on the sidelines until it is too late to act. There is no historical basis for these assumptions.
- The industry, its regulators, and the States are responsible for ensuring electric-system reliability while reducing carbon pollution from power plants as required by law. These responsibilities are compatible, and need not be in tension as long as all parties act in a timely way and use the many reliability tools at their disposal. These issues will be solved by the dynamic interplay of actions by regulators, entities responsible for reliability, and market participants – with many solutions proceeding *in parallel*. This is one reason why a recent survey of 400+ utility executives found that more than 60% felt optimistic about the Clean Power Plan and either supported the proposed emissions reduction targets or would make them more stringent.
- PJM (the grid operator for the nation's largest competitive wholesale power market) is already adapting to changes underway in the electric industry. PJM's own analyses demonstrate that regional, market-based approaches can meet Clean Power Plan goals at lowest cost, with retirements likely spread out over a number of years. The results indicate that energy efficiency and renewable resources can reduce the quantity of existing coal-fired units at risk of retirement. PJM is well positioned to lower carbon pollution while relying on its standard reliability tools.

Based on our own analysis and experience, we conclude that the impacts on electricity rates from well-designed carbon-pollution control programs will be modest in the near term, and can be accompanied by long-term benefits (lower electricity bills and positive economic value to state economies). States have a long track record of using various regulatory tools to encourage utility programs/investments that minimize the cost of electric service, consistent with the myriad of public policies (tax, environmental, reliability, labor, and other areas of policy) that affect electric supply.

Although states differ in many ways, all states have programs, policies and practices that will allow them to develop plans that align well with their different circumstances while still complying with the new carbon-control requirements. Market-based mechanisms, in particular, offer unique opportunities to minimize costs while also reducing carbon pollution from existing power plants. Also, states have long-standing utility-ratemaking principles, practices and programs to help protect low-income customers.

Thank you for the opportunity to present this testimony to the Subcommittee.

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Good morning, Chairman Whitfield, Ranking Member Rush, and Members of the Committee. My testimony focuses on the impacts of the Environmental Protection Agency's recent proposal to regulate carbon pollution from the nation's existing fossil fuel power plants.

I focus my comments in particular on the implications of the EPA's proposal for electric-system reliability and impacts on consumers. I have recently authored or co-authored four papers which address these issues, and want to share their results with the Subcommittee. (I attach them to this statement.)

As background: I am a former state cabinet officer (Secretary of Environmental Affairs) and regulator (Commissioner of the Department of Public Utilities and Director of the state's energy facilities siting board) in Massachusetts. I was appointed to those positions by governors of both parties. I also served as Assistant Secretary for Policy at the U.S. Department of Energy. I have direct familiarity with state administration of federal and state environmental and energy laws. As a consultant for a wide variety of clients (including state governments, private companies, grid operators, utilities, large consumers, energy project developers, foundations, tribal governments), I also have studied the implications of federal and state energy and environmental laws on energy markets, electric reliability, local economies, and consumers. I have participated actively on

industry panels (including serving as head of the policy subgroup of the National Petroleum Council's study on shale gas development, a member of the Secretary of Energy's Advisory Board on Shale gas risk, the chair of the External Advisory Council of the National Renewable Energy Laboratory (NREL), a co-chair of the NAESB Gas-Electric Harmonization Committee, and a co-chair of the Bipartisan Policy Center's project on cyber security and the electric grid). And as a co-lead convening author of the National Climate Assessment's chapter on energy production and use, I am deeply aware of the state of knowledge about the implications of a changing climate on American energy facilities and markets, and consumers' demand for energy in the years ahead.

My testimony today focuses in particular on the EPA's Clean Power Plan, which the EPA proposed in June 2014 under the authority given to it by Congress in the Clean Air Act ("Act") and following upon the 2007 ruling of the U.S. Supreme Court in *Massachusetts v. the Environmental Protection Agency* that greenhouse gases ("GHG") meet the definition of an "air pollutant" under the Act.

Having a reliable and efficient electric industry is, of course, critically important for Americans and for the U.S. economy. Americans demand world-class electric reliability at reasonable prices. The U.S., as the world's largest economy and the world's historically largest emitter of carbon pollution, is poised to take seriously its role in controlling such emissions.

The American power sector represents the nation's largest source of greenhouse gas emissions. Americans are already feeling the damaging effects of climate change. The U.S.'s cumulative CO_2 emissions exceed those of any other country, and our power sector produces one out of every 15 tons of energy-related CO_2 emissions produced anywhere in the globe. Taking action to reduce

emissions from the U.S. power sector will have a material impact on reducing global emissions and mitigating the costly impacts of climate change.

Just as important are the laws, policies, and expectations surrounding assurance of electric-system reliability and provision of electricity at just and reasonable rates. Fortunately, the EPA's proposed regulation allows flexibility that states can use to implement the Clean Power Plan in ways that can minimize impacts on consumers and respects their expectations for a reliable electric system.

Having read a significant portion of the comments submitted by stakeholders about the Clean Power Plan, my co-authors and I found in our two most recent reports (published in February and in March of 2015) that:

- Since the EPA proposed its Clean Power Plan last June, many observers have raised concerns that its implementation might jeopardize electric-system reliability. Such warnings are common whenever there is major change in the industry and play an important role in focusing the attention of the industry on taking the steps necessary to ensure reliable electric service to Americans.

- Given the significant shifts already underway in the electric system, the industry would need to adjust its operational and planning practices to accommodate changes even if EPA had not proposed the Clean Power Plan. As always, grid operators and utilities are already looking at what adjustments to long-standing planning and operational practices may be needed to stay abreast of, understand, and adapt to such changes in the industry.

- The standard reliability practices that the industry and its regulators have used for decades are a strong foundation from which any reliability concerns about the Clean Power Plan will be addressed.

- The Clean Power Plan provides states and power-plant owners a wide range of compliance options and operational discretion (including various market-based approaches, other means to allow emissions trading among power plants, and flexibility on deadlines to meet interim targets) that can prevent reliability issues while also reducing carbon pollution and compliance costs. Experience has shown that such approaches allow for seamless, reliable implementation of emissions-reduction targets.

- Some of the reliability concerns raised by stakeholders about the Clean Power Plan presume inflexible implementation, are based on worst-case scenarios, and assume that policy makers, regulators, and market participants will stand on the sidelines until it is too late to act. There is no historical basis for these assumptions.

- In the end, the industry, its regulators and the States are responsible for ensuring electric-system reliability while reducing carbon pollution from power plants as required by law. These responsibilities are compatible, and need not be in tension as long as all parties act in a timely way and use the many reliability tools at their disposal.

These issues will be solved by the dynamic interplay of actions by regulators, entities responsible for reliability, and market participants – with many solutions proceeding *in parallel*. Indeed, this dynamic interplay is one reason why a recent survey of over 400 utility executives nationwide found

that more than 60 percent felt optimistic about the Clean Power Plan and either supported EPA's proposed current emissions reduction targets or would make them more stringent.

Further, in a report focusing on the "PJM Interconnection" – the grid operator for the nation's largest competitive wholesale power market, which touches 13 states and the District of Columbia – we found that:

- PJM is already adapting to changes underway in the electric industry, and doing so successfully from a reliability point of view. As a region with electric capacity totaling approximately 200 gigawatts ("GW"), PJM has seen some 12.5 GW of mostly aging, coal-fired resources retire during the 2010-2014 period, due largely to economic and regulatory factors. Another 7.6 GW is expected to be retired over the next 3-4 years. These plants are being replaced with new resources – primarily natural gas-fired and wind projects – and there is a deep bench of additional new proposed projects ready to step in to meet future needs. PJM has effectively administered processes to manage this transition in a way that meets both reliability and efficiency objectives.

- PJM's own analysis of compliance options demonstrates that regional, market-based approaches can meet Clean Power Plan goals across PJM states at lowest cost, with retirements likely spread out over a number of years. PJM's recent modeling, performed at the request of the Organization of PJM States, evaluates a wide array of potential compliance approaches and identifies capacity at risk of retirement. In addition to stressing the benefits of a flexible and collaborative approach, the results indicate that expansion of energy efficiency and renewable resources can reduce the quantity of existing coal-fired units at risk

of retirement. Also important, PJM's analysis only reflects adding capacity from proposed projects already in PJM's interconnection queue (totaling 14.5 GW); the total quantity of new projects is likely to be much higher over the full time frame of Clean Power Plan implementation.

- PJM and the PJM states have extensive authorities and experience with administrative mechanisms to address – and successfully resolve – potential reliability violations associated with the retirement of power plants. These mechanisms include extending unit operations through "reliability must run" contracts, accelerated procurements of demand and supply resources, temporary waivers of regulatory requirements if or when reliability is an issue, and fast-tracking resource siting and permitting when needed to meet short-run reliability challenges.

- PJM has demonstrated success with reliability challenges in the past, including retirements related to low natural gas prices and the Mercury Air Toxics Standard ("MATS"), and stresses on the fleet during the winter 2014 Polar Vortex. In the case of the Polar Vortex, some stakeholders have claimed that operating conditions during early 2014 prove that the Clean Power Plan could be a threat to reliability. In fact, for PJM, the Polar Vortex is a case study of how numerous planning, operational, and market tools can be (and are) deployed to ensure reliability in response to unexpected events. Moreover, during the more recent harsh 2015 winter when new record-breaking peak loads occurred, PJM's "reliability tool kit" functioned nicely and possibly even improved over the past year.

- PJM is well positioned to lower carbon pollution from existing power plants while relying on the reliability tools and operating procedures it uses with great success.

We note that some observers have contended that consumers will experience net costs from controlling carbon pollution from power plants because, in those observers' view, overall compliance costs will outweigh economic and other benefits. EPA's analysis indicates that: the nation's citizens and economy benefit from public health benefits of reducing pollution from existing power plants; and electricity customers will see lower electricity bills over the long run with the Clean Power Plan in place.

Based on our own analysis and experience, we believe that the impacts on electricity rates from well-designed carbon-pollution control programs will be modest in the near term, and can be accompanied by long-term benefits in the form of lower electricity bills and positive economic value to state and regional economies.

There are sound reasons to be confident that electricity consumers can and will benefit from states' plans to lower the carbon intensity of their electric systems:

- First, states have a long track record of using various regulatory and other policy tools to encourage utility programs and investments that minimize the cost of electric service, consistent with the myriad of public policies (tax, environmental, reliability, labor, and other areas of policy) that affect the provision of electricity. State officials (including utility regulators) are keenly focused on protecting electricity customers and will keep that objective front and center as they determine how to reduce carbon pollution.

- Second, under the proposed Clean Power Plan, states will have the flexibility, experience and tools to prepare and implement State Plans that fit their circumstances, minimize costs, and provide benefits to customers. Each state can put together the elements of a plan well-suited to its own conditions, and will have the ability to phase in changes over the 2020-2029 period in ways that accommodate smooth transitions. Although states differ in many ways – including their electric systems, their regulatory culture, and their electric-industry structure – all states have programs, policies and practices that will allow them to develop plans that align well with their different circumstances while still complying with the new carbon-control requirements.

- Third, market-based mechanisms offer unique opportunities to minimize costs while also reducing carbon pollution from existing power plants. States can implement such market-based programs within state boundaries or collaborate with other states to develop and implement workable multi-state programs to control carbon pollution from existing power plants in ways that fully preserve the rights of states in program design and administration. Such multi-state, market-based mechanisms to control carbon emissions can also respect the practicalities of reliable electric system operations, and can be seamlessly integrated into both traditionally regulated and competitive electric-industry settings. Market-based mechanisms can provide opportunities for states to capture the economic value of carbon-emission allowances, and direct those revenues for consumer and public benefit. Based specifically on our detailed analysis of states' experience with the Regional Greenhouse Gas Initiative and the design of a wide array of programs that insulate lower-income consumers,

we believe that the impacts on electricity *rates and bills* from well-designed CO_2-pollution control programs will be modest in the near term, especially for low-income customers.

- Fourth, states are well equipped through long-standing utility-ratemaking principles, practices, and programs to help protect low-income customers when electricity costs increase. Such tools include discounted rates and bill-arrearage management plans, dedicated funding for low-income energy-efficiency and weatherization programs, utility-driven charitable contribution programs, one-time emergency assistance programs, LIHEAP funding for heating and utility bill assistance, and disconnect/shut-off protection policies. Among the many states we found to be offering targeted energy efficiency programs for low-income customers are Colorado, Florida, Georgia, Illinois, Maine, Maryland, Michigan, Missouri, Montana, North Carolina, Ohio, and Texas.

In the end, the states are in control. State environmental, energy and utility-regulatory agencies can tailor compliance approaches to their individual circumstances, and in doing so they can play a significant role in driving down and managing the costs of Clean Power Plan compliance. The components of their State Plans will affect compliance costs and collateral benefits. And states' regulatory and ratemaking policies can influence how compliance actions undertaken by owners of power plants and other actors translate into impacts on electricity bills.

There clearly are a number of strategies that states can include in their State Plans to at least partially offset the impact of program costs on consumers. Experience demonstrates that some approaches can even generate net benefits to electricity customers and the larger state economy. An example of this is the RGGI states' auction of carbon allowances and use of the auction proceeds to support

energy efficiency and customer bill credits; we have previously concluded in our detailed study of RGGI's experience that it provided net benefits (and lower electricity bills) to customers and the economy of each participating state.

Finally, the electric industry is undergoing major transitions. These changes arise from such things as: dramatic increases in domestic energy production (stemming from the shale gas revolution), shifts in fossil fuel prices (so that gas is less expensive than coal in many power plants), retirements of aged infrastructure, and strong growth in energy efficiency and distributed energy resources. In light of the significant shifts already underway in the electric system, the industry would need to adjust its operational and planning practices to accommodate changes even if EPA had not proposed its carbon-control regulation.

Thank you for the opportunity to present this testimony to the Subcommittee.