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Eastern Regional Technical Conference on Environmental Regulations and Electric Reliability, Wholesale Electricity Markets, and Energy Infrastructure

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Maryland, the Regional Greenhouse Gas Initiative, and the Clean Power Plan

Maryland is one of the nine states participating in the Regional Greenhouse Gas Initiative (RGGI) – a flexible, cost-effective program designed to reduce carbon emissions from the power sector. In addition to Maryland, the other RGGI participating states include Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Together, the nine states continue to successfully implement the nation's first fully-operational carbon market. The RGGI program caps emissions by first determining a regional budget of CO_2 allowances, and then distributing a majority of the CO_2 allowances through regional auctions so that the states may capture the allowance value for reinvestment in strategic energy programs.

Collectively, the nine RGGI participating states represent 16 percent of the U.S. economy and generate a total gross domestic product of 2.4 trillion U.S. dollars. The states work together to create a unified market for auctioning and trading carbon allowances so that environmental goals are achieved through least-cost, market-based solutions. Although the nine states have collaborated effectively for the better part of a decade, the RGGI region remains diverse in many aspects. The RGGI states comprise three separate regional transmission organizations, different political landscapes, and dissimilar generation profiles.

For example, Maryland's in-State generation remains predominately coal [See Graph 1 in Appendix]. As a part of RGGI and coupled with other state energy initiatives, Maryland has diversified its fuel mix and reduced its carbon footprint. Since 2005, in-State generation from renewables, nuclear energy, and natural gas as a percentage of total generation mix has increased from 36 percent to 55 percent, while in-State generation from coal has decreased from 56 percent to 44 percent.

Over the entire RGGI region, power sector carbon pollution has decreased by over 40 percent, while the regional economy has grown by 8 percent (2005 to 2013) [See Graph 2 in Appendix]. Non-hydro renewable generation has increased by 47 percent, while regional dependency on coal and oil has decreased. The carbon intensity of the RGGI states' power sectors (in tons per MWh) has decreased at twice the rate of the rest of the country.

Market forces and complementary state policies and programs, such as RGGI, are driving these cost-effective pollution reductions while simultaneously supporting local economies. State energy efficiency, demand response, and renewable energy initiatives, as well as policies to encourage fuel-switching to less carbon-intensive fuels, all work in tandem to reduce pollution and to establish long-term solutions for reliable energy infrastructure. Many of these complementary state strategic energy initiatives are funded using proceeds from the regional RGGI allowance auctions – creating a virtuous cycle of benefits that also serves to minimize ratepayer impact.

Through 2013, across the region the RGGI states reinvested over $950 million of auction proceeds in energy efficiency, clean and renewable energy, and other strategic energy programs. Maryland accounted for more than $230 million of this regional investment, with 85 percent of the State auction proceeds directed toward energy efficiency projects and direct bill assistance. The reinvestment of auction proceeds in consumer benefit programs has helped more than 215,800 low-income Maryland families pay their energy bills, supported energy efficiency upgrades at 11,800 low- to moderate-income households, and helped 5,206 families and 201 businesses in Maryland install solar, wind, and geothermal systems.

An independent analysis by the Analysis Group on the economic impacts of RGGI concluded that investments from the RGGI program's first three years alone are adding $1.6 billion net economic value to the region, and that benefits are likely to have increased further since then [See Note 1 in Appendix]. Changes to the RGGI program in 2014 (including a 45 percent reduction to the cap) are projected to provide an additional $8 billion in gross regional product and add more than 130,000 job-years.

These benefits – both economic and environmental – informed the perspective of the RGGI states as we voiced support for the general framework of the Clean Power Plan. Through two sets of comments in which we expressed our support, we also recommended revisions to the Plan to ensure that early action to reduce carbon emissions from the power sector is recognized, and that the state targets are verifiable, transparent, equitable, and enforceable [See Notes 2 and 3 in Appendix].

The RGGI states commend the EPA for recognizing multi-state, mass-based programs like RGGI as an acceptable means by which to demonstrate compliance with the Clean Power Plan. Regional mass-based programs are advantageous in part because they closely align with the regional nature of the electricity grid, and allow for a simple, transparent, and verifiable tracking and compliance system. Recent analysis from PJM calculated higher compliance costs for states that "go it alone," underscoring the cost-effectiveness of regional plans. Groups of states can implement a regional emission budget that reduces overall emissions across a region using the most cost-effective measures available to a larger geographical boundary, while allowing for potential emission increases in some specific locations where more efficient energy resources are available. This structure allows the market to determine the most cost-effective solutions, helping to maximize emission reductions at the lowest possible cost – a concept demonstrated by the RGGI states' own experience.

Furthermore, reliance on a regional, market-based construct to accomplish environmental goals prevents the superimposition of any additional function on our markets beyond the roles already required of our existing electricity market players. Reliable dispatch of the least-cost resources remains with our grid operators, the North American Electric Reliability Corporation retains its responsibility to assure the reliability of the bulk power system, and our utilities retain responsibility for distribution-level reliability. Maryland recognizes that reliability is of utmost importance to the success of any power

sector initiative, including RGGI and the Clean Power Plan. In both cases, a properly designed plan allows grid reliability and pollution reduction programs to be fully compatible.

In the RGGI states' experience, our power sector has been able to respond effectively to environmental regulations in less time than the EPA provides the rest of the country as part of the Clean Power Plan. In fact, measures supported by RGGI investments in peak demand reduction and energy efficiency programs have advanced reliability goals in the region. Maryland has achieved a 14.6 percent reduction in peak electricity demand from a 2007 baseline, equivalent to avoiding the need for 1,743 MW from 2008-2014. In contrast, the interim compliance goal notwithstanding, states have 15 years to meet the final compliance goal. This allows adequate time for grid reliability to be fully upheld through ordinary planning and resource development.

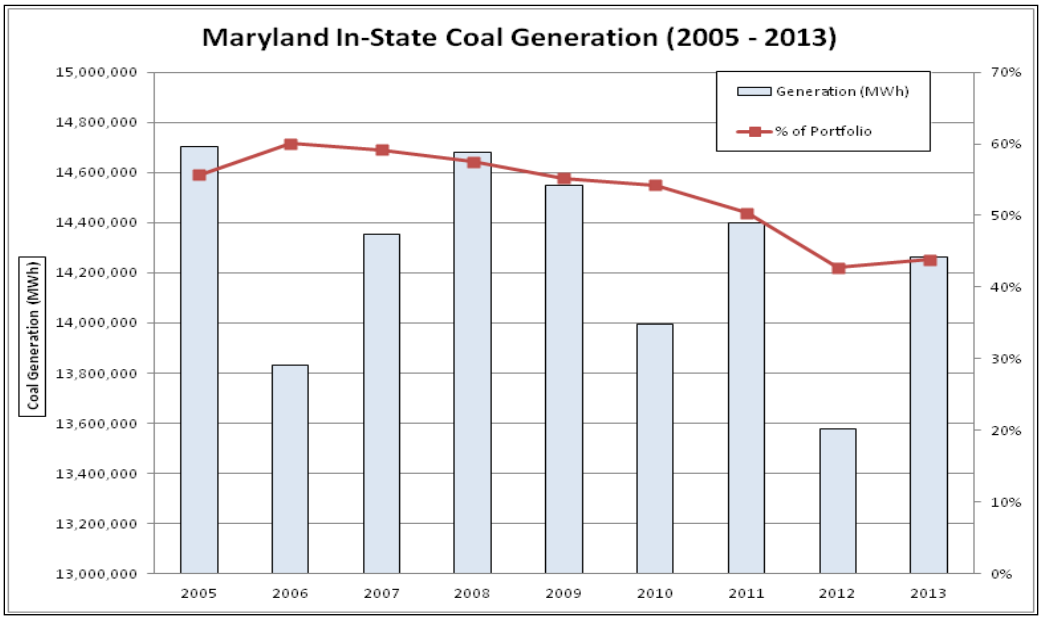
Independent studies of reliability under the proposed Clean Power Plan confirm the experience of the RGGI states. Researchers including the Analysis Group have noted that utilities' goals of ensuring reliability and reducing carbon pollution are fully compatible [See Note 4 in Appendix]. Others have noted that many of the grid changes encouraged by the Clean Power Plan are already underway due to existing economic forces and environmental regulations already in effect. Likewise, while the ISO/RTO comments suggest that more reliability assessments should be undertaken, the comments conclude that well-designed plans will ultimately be able to ensure reliability [See Note 5 in Appendix].

Through our participation in RGGI, Maryland has accumulated invaluable lessons learned that may be instructive to other states as they investigate their options for compliance with the Clean Power Plan. Maryland looks forward to working with FERC, EPA, and our fellow states to navigate compliance options as the implementation of the Clean Power Plan moves forward. Our experience has demonstrated that flexible carbon emission reduction programs, coupled with other state policies, can work within the construct of establish markets to reduce harmful pollution while also generating economic benefits and supporting grid reliability.

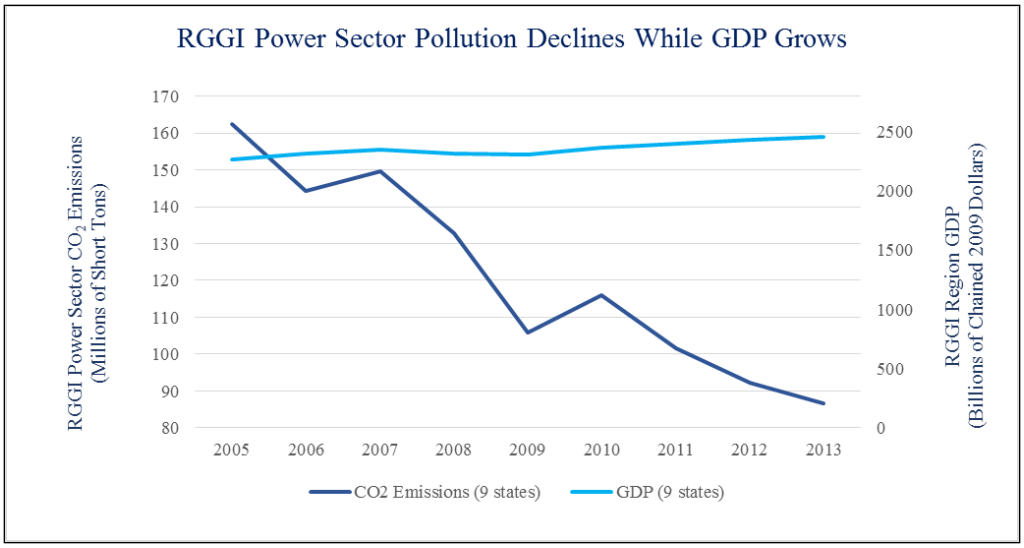
Appendix

1. *EPA's Clean Power Plan: States' Tools for Reducing Costs and Increasing Benefits to Consumers*. The Analysis Group, 2014.
2. *RGGI States' Comments on Proposed Carbon Pollution Guidelines for Existing Stationary Sources: Electricity Generating Units*. Nov. 5, 2014.
3. *RGGI States Supplemental Comments on Proposed Clean Power Plan*. Dec. 1, 2014.
4. *Electric System Reliability and EPA's Clean Power Plan: Tools and Practices*. The Analysis Group, Feb. 2015.
5. *Comments of the ISO/RTO Council on Carbon Pollution Guidelines for Existing Stationary Sources: Electricity Utility Generating Units.* Dec. 1, 2014.

Graph 1:



Graph 2:


RGGI Power Sector Pollution Declines While GDP Grows
RGGI Power Sector CO_2 Emissions (Millions of Short Tons)
RGGI Region GDP (Billions of Chained 2009 Dollars)
170
160
150
140
130
120
110
100
90
80
2500
2000
1500
1000
500
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
CO2 Emissions (9 states)
GDP (9 states)