

THE ECONOMIC IMPACTS OF RGGI's FIRST THREE YEARS

SUMMARY TESTIMONY OF PAUL J. HIBBARD

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Good morning, and thank you, Senator Pavley and members of the Committee, for the opportunity to testify before you today. My name is Paul Hibbard. I am Vice President with Analysis Group, Inc., an economic and financial consulting firm based in Boston, and with offices in San Francisco, Los Angeles, and Menlo Park, among other cities outside California. Prior to joining Analysis Group, I served as Chairman of the Massachusetts Department of Public Utilities from April 2007 to June 2010. Earlier in my career I held positions in state government at the Public Utilities Commission during the restructuring of the electric industry in MA, and at the state's Department of Environmental Protection when we first embarked on state efforts to control emissions of CO2.

I am here to report on the results of an economic study I recently completed, with colleagues at Analysis Group, of the economic impacts of the first three years of the RGGI carbon dioxide cap & trade program; a program that includes all of New England, New York, New Jersey, Delaware and Maryland. A powerpoint presentation describing the process and results of our analysis were provided to you in the materials for this hearing. I am happy to discuss anything in that presentation, but will spend the next few minutes here to provide you an overview of our study and our key findings.

RGGI was the result of several years of deliberation by the RGGI states beginning in 2005, with the states ultimately agreeing to (1) cap emissions from the electric sector, (2) auction virtually all of the allowances, and (3) use the auction revenues in a manner left to the discretion of the individual states, subject only to the express goal that the funds be used for public policy purposes. Our analysis found that each of these decisions played a critical role in determining the economic impacts of program implementation.

Our analysis is a snapshot of economic impacts associated with the first compliance period, spanning the three years of 2009, 2010, and 2011. We explicitly did not assess the climate risk mitigation or environmental impacts of the program, the effectiveness of the cap, or try to forecast or project program implementation going forward. Many such studies have been completed by others, or are underway. For our analysis, we simply followed the money. We looked at actual dollars collected through auctions in the first three years, tracked how the money was spent by states, followed the flow of dollars and the outcomes of funded programs in wholesale electric markets and the economies of

the RGGI states, and measured the resulting economic impacts. For the purpose of our analyses, we modeled power sector dispatch outcomes using General Electric’s MAPS model, and macroeconomic effects using IMPLAN. Both are robust, industry-tested models that have been for over a decade – and continue to be – used by developers, utilities, government agencies, Independent System Operators, and other industry analysts. We also convened a technical advisory group of highly-competent individuals steeped in macroeconomic and power system modeling to help vet our modeling approach, assumptions, and scenarios, and to review our interpretations of model outputs. Our technical advisory group members are listed on page 2 of the presentation, and a schematic of our modeling approach is presented on page 6.

So what did we find? The results are summarized on page 9 of the presentation. Over the first compliance period, RGGI states collected approximately \$1 billion through auctioning allowances, and spent the money in a variety of ways, with the following economic outcomes:

- The program produces roughly \$1.6 billion in economic value added across the region;
- Customers initially experience wholesale power cost increases of less than one percent, but over time save over \$1 billion on electricity bills and another \$170 million in avoided heating costs. These savings derive primarily from the fact that reinvestment of auction proceeds in energy efficiency programs reduces participating customer bills, and reduces the prices paid in wholesale markets for all customers;
- RGGI spending leads to the creation of an additional 16,000 “job-years;”
- Since the Northeast has very little in the way of indigenous fuels for energy, energy savings reduce the region’s demand for fossil fuels, keeping in the local economy more than \$765 million that otherwise would have gone to fossil fuel producers;
- Power plant owners initially benefit from increased wholesale prices as the opportunity cost of allowances is bid in regional markets, but due to decreased demand from efficiency investments they recover \$1.6 billion in lower revenues over time;
- In short, the first RGGI compliance period generates greater economic growth in every one of the 10 states that participated, than would occur without a carbon price.

There are several important take-aways from our analysis that, while particular to the RGGI program generally, and its first compliance period in particular, provide insights that are likely to be relevant in the design of any cap and trade program focused in whole or in part on the electric sector.

First, the RGGI program has worked seamlessly within the context of wholesale electricity markets. All ten states in the RGGI region are within the New England, New York, or PJM RTOs that have competitive wholesale markets for energy, capacity, and reserves. Allowance prices are reflected in wholesale power prices and money is reinvested in energy efficiency, in turn influencing electricity consumption, power plant dispatch, plant owner revenues, and emission profiles. In addition, while the program involved ten different states and multiple jurisdictions and agencies within each state, and required a high level of coordination in program design, allowance auctions, and program oversight

and administration, states have worked extremely well together, resulting in remarkably smooth and efficient program implementation.

Next, the program was fundamentally rooted in states' rights; states were free to give away, sell, or auction their allowances in any way and any number they saw fit, and to use revenues in accordance with their own public policy objectives. But in the end, the *economic* value of the program flows mainly from two extremely important decisions made by the states. First, every state chose to auction virtually all of their allowances through a centralized regional auction, retaining the value of allowance for use by state governments to fund a variety of public policy programs and initiatives. Second, while the states invested the money in a variety of ways (how the states spent the money is summarized on slide 8, and presented in more detail in the report), nearly all of it was tied to public policy objectives, and most importantly the vast majority of it was reinvested back into energy efficiency programs. This helped centralize a large portion of benefits within the electric sector, mitigated costs impacts on electricity consumers, and had a major effect on the economic impacts of program implementation.

We found that efficiency amplifies the economic benefits of program investments because it stimulates the economy in two ways: first when the money is doled out to local energy auditors and efficiency program installers, and retailers of more efficient appliances, lighting products, etcetera; and second when consumers end up with more disposable income as a result of lower bills, leading to additional reinvestment in the local economy. This is shown on slides 10 and 11, which reveal that the greater the level of efficiency spend, the greater the accrual of economic benefit.

It is important to note in this respect, however, that we only looked at quantifiable economic benefit, and in that context energy efficiency stands out. But states spent the money in an incredible variety of ways. We document in the report nearly 150 different ways states spent the money, and conducted detailed case studies on a dozen of these. What becomes clear is that a number of important public policy objectives are met in the different ways the money is used, and not all of the benefits and impacts are quantifiable in an economic sense. Some other key examples of state spending include (1) direct bill assistance for low-income electricity consumers; (2) direct investment in renewable or advanced energy projects; (3) investment in wetlands restoration; (4) contributions to address state budget deficits, retaining public programs that might otherwise be cut; (5) education and training programs; (6) supporting community or municipality energy programs; and (7) funding for additional GHG mitigation measures. The point here is that while our economic analysis reveals economic benefits tied to program implementation, and the economic value of reinvestment in energy efficiency, we also found that the design of the program allowed states to pursue a wide range of important public policy objectives using allowance proceeds.

With that for a high-level summary, I want to thank you again for this opportunity to comment, and I look forward to any questions you might have.