

# *Lessons Learned for Integrating Renewables into Greenhouse Gas Trading Programs*

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## INTRODUCTION

This paper reviews the Regional Greenhouse Gas Initiative (RGGI) process and outlines lessons learned for incorporating renewable energy and specifically the voluntary renewable energy market into greenhouse cap-and-trade regimes.<sup>1</sup> It also draws conclusions about greenhouse gas reduction efforts in general and key elements in their success or failure. Notes and minutes from RGGI meetings as well as the meetings of the Renewable Steering Committee and the Renewable Working Group were used to write this report. Other information used includes materials presented on the RGGI website, papers and articles on RGGI, and conversations between the Center for Resource Solutions (CRS) staff and stakeholders and regulators involved in the process.

This report documents the work of CRS in the Regional Greenhouse Gas Initiative proceedings to integrate renewable energy as an optional tool for greenhouse gas (GHG) reduction and identifies the ‘lessons learned’ in this process.

The RGGI effort was unique in its scope and reach as a regional response to a lack of federal initiative on policies to reduce greenhouse gas emissions. RGGI also has the potential to serve as a model for other U.S. states and regions as well as the Federal Government interested in developing greenhouse gas policies in the future. As such, it is important to delineate what went right and what went wrong as seen from a renewable energy perspective. In addition, we make some observations about the perceived efficacy of certain elements of a GHG Cap and Trade approach.

This report will show how the institutional and procedural arrangements favored existing policy precedents, players, and tools -- possibly to the detriment of effectively achieving RGGI’s stated goals. CRS and its allies had to work from outside the formal process, creating their own RGGI Renewable Energy (RE) Steering Committee and Stakeholder Working Group while being dependent upon others to deliver their message back to the larger stakeholder group. Informal conversations with specific regulators from some of the more influential states as well as the Governors’ staffs played a major role in getting the renewable message across. In conclusion CRS used several different strategies, but it was the combination of them all that led to the promise of a relatively successful end result from the renewable energy voluntary market perspective.

The paper describes: (1) The Chronology of RGGI Events, (2) the Renewable Energy Working Group Process, (3) Characteristics of the RGGI Process that might be relevant to other greenhouse gas reduction programs, (4) Lessons Learned, and (5) Conclusions.

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<sup>1</sup> The RGGI process has not yet been completed but we felt a report on the results to date would be more beneficial than waiting another six months to a year for closure on the RGGI Model Rule. We will submit an addendum to update this report based upon the final outcomes.

## RGGI CHRONOLOGY

The RGGI process is not the result of legislative direction in any of the states. Instead it is a result of an executive initiative in each state. It is a result of a letter mailed by New York's Governor George Pataki in April of 2003 inviting 11 states to cooperate on a regional framework to reduce GHG emissions from the power sector. In the letter Governor Pataki focused on electricity generation sources that emit greenhouse gases:

*"The initiative would involve developing a regional market-based emissions trading system to require power generators to reduce carbon dioxide emissions...through a regional approach that promotes further emission reductions at power generating facilities ...Governor Pataki is calling on the [states]...to work with New York over the next two years to develop a flexible, market-based cap and trade program for carbon dioxide emissions from power plants. The effort would build upon the successful national cap and trade program for nitrogen oxide and sulfur dioxide emissions."*<sup>2</sup> [Our emphasis]

In this invitation letter the Governor had already concluded that the NO<sub>x</sub> and SO<sub>2</sub> programs would be applicable to reduce CO<sub>2</sub> emissions, and that the focus should be on fossil fuel electricity generators. Eight of the invited states decided to join New York in the effort and representatives from each state, generally air regulators, worked together to write an *Action Plan*. This action plan proved to be critically important in choosing the guiding principles, participants, stakeholders and process

### **Action Plan**

The action plan followed the Governor's direction and stated that the "program will initially be aimed at developing a program to reduce carbon dioxide emissions from power plants in the participating states."<sup>3</sup> One of the principles it laid out was that the "initial phase of the cap and trade program will entail the allocation and trading of carbon dioxide allowances to and by sources in the power sector only."<sup>4</sup> In setting up the process they emphasized briefings "by outside expert sources that are focused on issues related to program design for a multi-state GHG cap and trade program for power plants."<sup>5</sup>

Besides outlining the principles for the design and scope of RGGI, the Action Plan laid out a structure for the forthcoming work. The structure of the RGGI efforts was designed with *Agency Chief Executives* at the top with the role of approving the recommendations from the *Staff Working Group Leadership* that would meet more frequently. The Staff Working Group consisted of two representatives from each state (one each from the states' energy regulatory and environmental agencies). This group in turn established a

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<sup>2</sup> NEW York Governor Pataki, *Governor Calls on Northeast States to Fight Climate Change - Neighboring States Asked to Take Regional Approach to Curb Emissions*, Press Release April 25, 2003 ([http://www.ny.gov/governor/press/03/april25\\_2\\_03.htm](http://www.ny.gov/governor/press/03/april25_2_03.htm)).

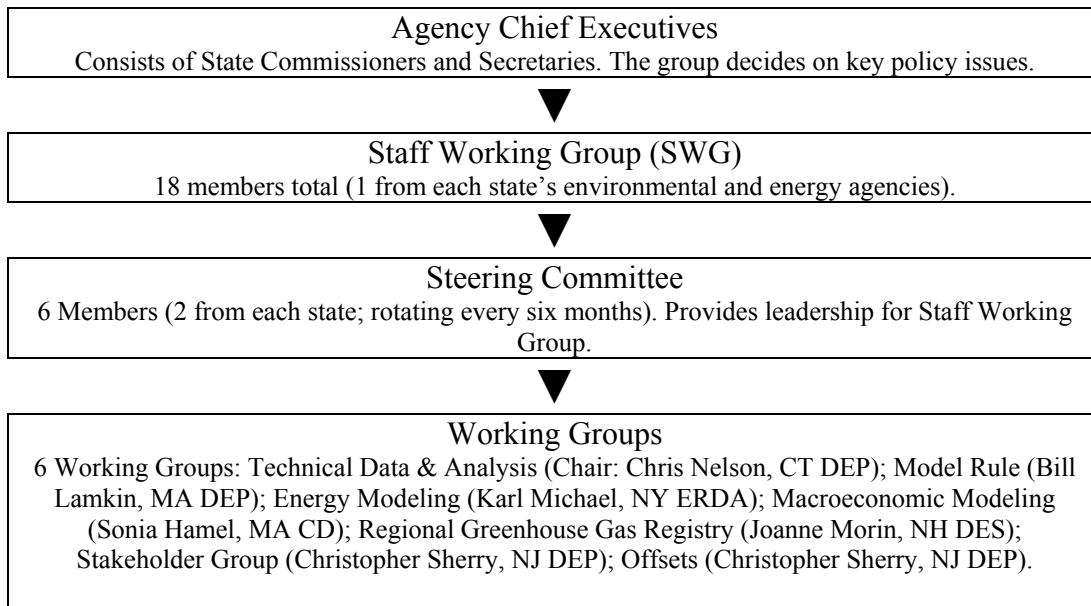
<sup>3</sup> Regional Greenhouse Gas Initiative, *Action Plan*, September 2003 (<http://rggi.org/about.htm>)

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

*Steering Committee* with representatives from three states that changed every six months. Finally, subgroups were created to develop plans for specific parts of the RGGI process. One of these subgroups, the Stakeholder Process Working Group, was tasked with drafting “a proposed plan for receiving, organizing and responding to input from stakeholders.”<sup>6</sup> In addition, states and Canadian provinces that were not part of RGGI could be observers in this group.

**Figure 1: RGGI Structure**



In this first policy document from the RGGI process there was a noticeable tendency to only include emitting sources in the power sector. While consistent with existing SO<sub>2</sub> and NO<sub>x</sub> cap and trade programs, it is a very limited way of looking at reducing emissions within the power sector as will be discussed later in this paper. This is not a surprising outcome of the process, since the writers of the Action Plan were generally air regulators steeped in the tradition of regulating polluters.

The Action Plan was adopted by the environmental chiefs and regulatory executives across the nine states. A deadline of April 2005 was established as the target for the final working group report that would then go back to the participating states for approval.

Subgroups were formed to facilitate the development of the Model Rule. These subgroups (Data Assembly, IPM Modeling, REMI Modeling and Benefits Analysis and Stakeholder Process) conducted background research and provided documents that ultimately formed the basis for the Model Rule. According to the Action Plan, once the Model Rule was approved by the participating states, a Memorandum of Understanding would be signed by the states including a commitment to participate in a regional

<sup>6</sup> Ibid.

organization to coordinate RGGI implementation. Also, after the Model Rule was approved by participating states, each state would initiate a Rulemaking process to implement the Rule on the state level.

Over the next 22 months, these subgroups met, preliminary issue papers were written and discussed, background research was undertaken and discussed, and options debated. No conclusions were reached during this period but various issues were vetted by the subgroups including the topic of how to integrate renewables into the RGGI process.

### **Model Rule**

After much delay the RGGI Staff Working Group released a Staff Working Group Package Proposal of the model rule on August 24, 2005. This was followed by a Stakeholder meeting on September 21, 2005 in Boston. The Proposal set out general guidelines for the start of the program, CO<sub>2</sub> reduction goals, and the cap allocation between participating states. The proposal also outlined ideas on the establishment of a Public Benefit fund, an offset program, and how to account for leakage (through a Strategic Carbon Fund). The purpose of the Public Benefit Fund was described as including:

*"The use of allowances to promote energy efficiency, to directly mitigate electricity ratepayer impacts, promote renewable energy technologies, and/or to stimulate or reward investment in technologies that will reduce emissions of carbon dioxide from power generation in the state."<sup>7</sup>*

No more detail on this was provided at the stakeholder meeting but it is possible that renewables could be allocated allowances through this fund. More importantly the proposal stated that "decisions on allowance allocations will be left to each state."<sup>8</sup> In other words any direct allocation of allowances to renewable generators would be determined state-by-state.

At the stakeholder meeting there was a lot of focus on the associated economic modeling, the role of leakage, and the CO<sub>2</sub> reduction goals. The concept of the voluntary market for renewable energy and CO<sub>2</sub> allocations was not discussed. Members of the staff working group did however confirm to CRS that a solution for the voluntary market would be identified and included in the final proposal.

The draft proposal package was sent to the Agency Chief Executives for their approval. This initiated the political phase with more direct involvement from the Governors of each state. Following intense negotiations the States announced a Memorandum of Understanding (MOU) on December 20, 2005 establishing an agreed-upon framework for the Model Rule. This compromise was only reached after the states of Massachusetts

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<sup>7</sup> RGGI Staff Working Group, *MEMO: Revised Staff Working Group Package Proposal*, August 24, 2005:

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<sup>8</sup> RGGI Staff Working Group, *MEMO: Revised Staff Working Group Package Proposal*, August 24, 2005:

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and Rhode Island withdrew from the RGGI effort. The agreement does allow for either or both of these states to re-enter RGGI. The agreement is revised from the package proposal and provides more detail. The MOU agreed on slightly more ambitious GHG reduction goals while also including 'safety valve' triggers, which will allow for increased use of offsets, if the price of CO<sub>2</sub> allowances increases above \$7 per ton. Offsets were defined as:

*"Landfill gas (methane) capture and combustion; sulfur hexafluoride (SF<sub>6</sub>) capture and recycling; afforestation (transition of land from non-forested to forested state); end-use efficiency for natural gas, propane and heating oil; methane capture from farming operations; and projects to reduce fugitive methane emissions from natural gas transmission and distribution."*<sup>9</sup>

Renewable projects are not included as an eligible offset type. It is unclear why although it could be based on the fact that renewable resources are considered to be 'inside' of the regulated sector (i.e. the power sector). However, since offset types can be located anywhere in the United States it is not clear why renewable energy projects would not be included. The MOU reaffirms the principle of leaving allowance allocations to the states. The only stipulations on the states are that "25% of the allowances must be allocated for a consumer benefit or strategic energy purpose."<sup>10</sup> This is similar to the consumer benefit fund referenced in the Package Proposal. The idea of a Strategic Carbon Fund was dropped. The issue of renewable energy allocations or other protections for the voluntary market was not mentioned in the MOU. Once again, CRS has received input from staff working on the MOU that an off-the-top approach (see *Interactions with RGGI* section) is likely, although it will probably have to be negotiated in each of the participating states.

### **Next Steps**

The States intend to release a draft Model Rule by the end of March 2006. Public comment will be accepted on this for 60 days before the states will issue a final version. Each state will then have to adopt the rule and associated polices, such as allocation schemes. For some states this will require legislative action, for others it will be implemented by the appropriate executive agency.

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<sup>9</sup> RGGI, *Memorandum of Understanding*, December 12, 2005: 4

<sup>10</sup> RGGI, *Memorandum of Understanding*, December 12, 2005: 6

## **THE RENEWABLE ENERGY WORKING GROUP**

In March 2004, the Center for Resource Solutions (CRS) received funding to participate in the RGGI process with the goal of ensuring that renewable energy generation would receive appropriate greenhouse gas reduction credits.

Specifically, CRS set out two goals for the process: 1) To develop an approach whereby renewable resources could be included as a means of reducing greenhouse gas (GHG) emissions within the RGGI regime, and 2) To make sure that the proposal was acceptable to renewable energy stakeholders and would be seriously considered by regulators and stakeholders in the RGGI process.

In order to achieve these goals there were four primary steps: 1) To convene a Steering Committee to determine the key principles and direction for the best strategic approach; 2) To provide a placeholder for renewables in the RGGI process by submitting a straw proposal in June of 2004; 3) To convene a stakeholder group to build consensus among renewable energy stakeholders for a more detailed proposal; and 4) To craft a final proposal for consideration by the RGGI Working Group in September of 2004.

Due to the manner in which the RGGI process unfolded, our work expanded from what was originally envisioned as will be apparent in the narrative below.

### **Renewable Energy Steering Committee**

CRS convened a Renewable Energy Steering Committee with representatives from the World Resources Institute (WRI), Bonneville Environmental Foundation (BEF), Renewable Ventures (NUON), Union of Concerned Scientists (UCS), and the Natural Resource Defense Council (NRDC) along with independent energy consultants. Since WRI, UCS and NRDC are official stakeholders in the RGGI process their inclusion ensured that renewables had at least a partial seat at the table. Later we added Rich Cowart (RAP), Larry DeWitt (PACE) and Valerie Strauss (Young Sommer) who were all active RGGI participants.

The Renewable Energy Steering Committee first convened on June 10<sup>th</sup>, 2004, to discuss how to develop a proposal for RGGI. It was decided that CRS would informally present a paper titled “Approaches to Integrating Renewable Energy into Greenhouse Gas Trading Programs” on June 24<sup>th</sup> (Appendix A) as a placeholder for a later more specific proposal. The paper outlined three options for including renewables in the proposed RGGI scheme: (1) A Set-Aside option; (2) An Output Based allocation; and (3) An Offset Program. This was a preliminary concept paper with a note that the renewable energy group would submit a more fleshed out proposal in September.

### **Renewable Stakeholder Group**

Following up on the initial thoughts outlined by the Renewable Energy Steering Committee members, CRS held its first meeting of the larger Renewable Energy Working Group (REWG) on June 29<sup>th</sup>, 2004. The REWG included representatives from non-profit organizations, the renewable energy industry and energy consultants (the full

list is attached in Appendix B). The meeting participants discussed the concepts presented by CRS at their first RGGI meeting. In order to move the process forward several participants committed to providing briefing papers on related subjects for the next REWG meetings. These papers are attached (Appendix C) and were on the following subjects: European Cap and Trade Lessons, Methodologies for Estimating Avoided Emissions from Renewable Generators, Using Greenhouse Gas Offsets in RGGI, Output-based Allocation, Set-asides for Renewable Energy under the RGGI Program, Offsets as a RGGI Tool, and the Interaction between RPS Compliance and GHG Allowances.

CRS crafted a draft proposal using concepts developed in the briefing papers. This paper emphasized the use of a sizeable Public Goods Allowance Set Aside consistent with the concept proposed by NRDC and supported by the other environmental groups represented on our Advisory Committee. The renewable energy representatives were comfortable with this concept as long as the set-aside was large enough that all the renewables sold in voluntary markets could expect to receive an allowance.

### **Interactions with RGGI**

Through subsequent meetings and conference calls of the Steering Committee and the REWG, agreement was reached on the content of a formal proposal, which was submitted in time for the RGGI Stakeholder meeting on September 13, 2004. The Stakeholder Group noted that “CRS has put together a paper on behalf of the renewables industry, to be posted on the RGGI website and they want to be included in process.”<sup>11</sup> The paper also included a Q&A section that emphasized the importance of the voluntary renewable energy market for meeting GHG reduction goals. Deliberations over the next month showed that not having a direct seat at the discussion table was a problem for the renewable community. In response to this CRS increased its efforts to communicate directly with key decision-makers involved in the process.

CRS representatives met with Franz Litz from New York’s Department of Environmental Protection and Chris Nelson from Connecticut’s Department of Environmental protection in October of 2004. From these discussions it appeared that the decision makers were still inclined to follow the model for allowance allocation used for SO<sub>2</sub> and NO<sub>x</sub> Cap-and-Trade Programs (i.e. emitters are given the allowances with, in some cases, a small set-aside for renewables -- though set asides were not uniform in application or use and were difficult for renewable generators to access). The SO<sub>2</sub>/NO<sub>x</sub> model has not served renewable energy generators well and it is feared that if applied to GHG cap and trade programs, it will be an even greater problem since GHG benefits are a major driver for renewable energy sales in voluntary markets.

Following these conversations, CRS wrote air regulators Litz and Nelson a letter, with a copy sent to the New York Governor’s office that included a detailed overview of the issues with the voluntary renewable energy market and cap and trade allocations. In our conversations, which took place in Albany, New York, we were buoyed by the fact that New York Governor Pataki had stated his strong support for the voluntary market for

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<sup>11</sup> Stakeholder Meeting Summary: 6.24.04: [http://rggi.org/docs/final\\_summary\\_6\\_24\\_04.pdf](http://rggi.org/docs/final_summary_6_24_04.pdf)



renewable energy including a policy that 1% of the New York State RPS target is to come from the voluntary market. The approach being considered by RGGI would undermine the Governor's plans. CRS also had conversations with Bill Lamkin of the Massachusetts Department of Environmental Protection and Sonia Hamel from the Massachusetts Office for Commonwealth Development and Chris Sherry of the New Jersey Department of Environmental Protection to better understand their positions on the inclusion of renewables in the RGGI program.

It appeared from feedback received from other RGGI Stakeholders that the Sub Committee Chairs had received the message regarding the importance of the voluntary RE market and wanted to accommodate those needs though they were still unsure of the best manner for accomplishing that.

In October, RGGI hosted a workshop on "Allocations and Apportionment of State Emissions Budgets." One of the presenters was Rich Cowart with the Regulatory Assistance Project and also a member of the REWG. During his presentation issues surrounding allocations for energy efficiency and renewables were discussed although no agreement was reached, noting that, "The participants did not reach a consensus on most of the issues discussed. The decisions about political issues are likely to be made at a political level, as was done in the SO<sub>2</sub>cap, and the EU ETS."<sup>12</sup>

As a result of various one-on-one conversations with stakeholders, it was decided that if the RGGI Working Group only agreed to a small Public Goods set-aside (as it appeared they were going to do), this would not be enough to cover both Renewable Energy and Energy Efficiency thereby having a negative result for both.<sup>13</sup> A new strategy was devised called "taking it off the top" (Appendix D). This approach would allow renewables sold in voluntary markets to make GHG reduction claims.

*After the RGGI baseline modeling has been completed and the greenhouse gas cap has been set, an allocation for voluntary green-market renewables would come off the top of the regional cap before pro-rationing to the states. This would represent a real reduction in the otherwise applicable cap, region-wide. In other words, allowances would be issued and retired on behalf of anticipated voluntary market sales.*

There was some push back on this approach since it would require periodic updating to reflect actual market conditions. Air regulators do not want to revisit the cap or the pro-rationing so we needed to present a simple way to update the voluntary market allowances without causing major upset to the underlying framework. This approach would not result in actual allowances being issued to either renewable generators or end

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<sup>12</sup> RGGI Allocations Workshop Summary 10.14.04 [http://rggi.org/docs/allocation\\_summary\\_10\\_28\\_04.pdf](http://rggi.org/docs/allocation_summary_10_28_04.pdf) p.5

<sup>13</sup> As it turned out, the 'set-aside' originally expected to support energy efficiency and renewables expanded to include other areas as well. Each state is to allocate 25% of their allowances for consumer benefit or strategic energy purpose including "...to promote energy efficiency, to directly mitigate electricity ratepayer impacts, to promote renewables or non-carbon emitting energy technologies, to stimulate or reward the investment in carbon emission abatement technologies with significant carbon reduction potential, and/or to fund Administration of this program."

use purchasers (though the Regional Greenhouse Gas Registry would be directed to give end use purchasers credit in their accounts for the renewables purchased). The primary limitation would be that generators would lose the option of selling CO<sub>2</sub> allowances into the market.

The advantage of this approach is that it sidesteps a key issue: Air regulators fear if they issue allowances to all renewables generators they will be pressured to issue them to nuclear and large hydro resources as well. In the "off-the-top" approach, no allowances are issued to renewables. The approach also removes competition for allowances between renewable energy and energy efficiency as would otherwise be the case if they were both part of Consumer (Public Goods) Allowances. Given that it appears that air regulators in most RGGI are including much more than energy efficiency and renewable energy in the set-aside, it is beneficial to not have an internal competition between RE and EE for those limited allowances.

The approach was discussed in a RE Working Group conference call and approved by the majority of the participants as a good alternative solution.<sup>14</sup>

In February 2005 RGGI hosted a Stakeholder's Workshop at which there was a Staff Working Group Update, a report on IPM Modeling, a Markets Workshop Follow-up and reports on the Status of Offsets Work. In sidebar conversations with air regulators at this meeting, we indicated that a large Consumer Allowance Pool (previously call a Public Interest Allowance Pool) was our first choice but in case the RGGI Working Group chose to limit this option to a small size (or not go with the option at all), we wanted them to have the Off-the-Top approach in their back pocket as an alternative. Concern was still expressed about how to update these allowances to reflect what is actually happening (though there seems to be no parallel updating work related to other RGGI assumptions).

The Off-the-Top update solution that seemed most useful was to make a generous forecast of the voluntary market for the compliance period, review the actual activity after three years and either put any excess allowances into the next three-year allocation (if there is one) or give any unused allowances to the Consumer Allowance Pool (or whatever strategy they had decided to use to accommodate EE).

At the stakeholder meetings in May and September of 2005 CRS continued to argue for the value of the voluntary market for renewable energy and the off-the-top approach. As had been the case throughout the RGGI process the issue was overshadowed by the larger issues of GHG reduction goals and economic consequences of RGGI. However, we were encouraged by the positive response we received from agency staff.

The draft MOU in December 2005 did not include any reference to the voluntary market though again we were assured by key State Working Group Members that they supported including the voluntary market though it was suggested that the proposal would need to apply to individual state allowances rather than allowances for the whole RGGI region.

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<sup>14</sup> Initially there was some skepticism towards this approach since it was not viewed as the ideal solution and there was a fear of setting a precedent for other regions.

These Working Group members indicated that though current plans did not contemplate mentioning the voluntary renewable energy market as part of the draft Model Rule<sup>15</sup> (due to the large number of higher priority issues with language still to be drafted) if we could provide explicit language for a voluntary renewable market process, there was some chance that there would be support for its inclusion.

As a result CRS drafted sample language that was discussed during a January 25, 2006 conference call with the REWG. The following was approved for submittal to the RGGI Working Group for possible inclusion into the Draft Model Rule:

**Definition: Voluntary Renewable Energy Purchases:** For the purpose of this rule, *Voluntary Renewable Energy Purchases* must meet the following criteria: (1) The purchase must be made by a retail customer; (2) The purchase must consist of eligible renewable resource(s); and (3) The renewable energy involved in the purchase cannot be counted toward any federal, state or local mandate. Such purchases may include: *renewable electrical energy* sold directly to retail customers in restructured electricity markets, *renewable energy certificates (RECs)* sold to retail customers, and renewable energy that is sold to consumers through *utility green pricing programs or green check-off programs*.

**Process: Incorporate as part of the Model Rule:** Each state should forecast the anticipated size of the voluntary renewable energy market in their state over the relevant three year time period (beginning in 2009), and retire the appropriate number of allowances on behalf of the voluntary market before allocating the remainder.

After each three year Compliance Period, each state will 'true up' the difference between the forecast of voluntary renewable sales and actual sales by adjusting the going forward forecast for the next Compliance Period accordingly.

**Methodology: Calculating Carbon Allowances for Renewables Sold in Voluntary Markets:** To calculate the number of CO<sub>2</sub> allowances associated with voluntary renewable purchases, multiply the average MWh fossil CO<sub>2</sub> emission rate for the applicable power pool times the estimated size of the voluntary renewables market in MWh.

This language was submitted to the appropriate people on the RGGI State Working Group and now we will see whether it is actually incorporated into the Model Rule. Though there remains a lot of work on a state-by-state basis in order to ensure that renewables are appropriately implemented, getting specific language in the model rule will help tremendously.

## **RGGI RELEVANCE FOR OTHER PROGRAMS**

Designing an emission reduction program is difficult under the best of circumstances. Being the first to tackle a fleshed out greenhouse gas reduction program in the United

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<sup>15</sup> Scheduled to be issued in March of 2006

States and trying to do it as a regional program is even more difficult. As pioneers, those participating in the RGGI process have had to learn as they went along setting both good and not so good examples for those that follow. We have been struck by the dedication and commitment of everyone with whom we have worked and hope this report is taken in the constructive manner in which it is intended.

The following section discusses some of the key variables that directly influenced the final outcome of RGGI and that may be relevant for other greenhouse reduction programs. These variables include: (1) The decision makers and their integration into the process; (2) How is the Model Rule decision process handled; (3) How the Model Rule is implemented; (4) The selection of stakeholder representatives; (5) The importance of the preliminary modeling on the outcome; (6) Handling the interaction between state RPS and GHG programs; and (7) Issues that influenced decision makers behind the scenes.

### **RGGI Decision Makers**

The state Governors of the participating RGGI states are the ultimate decision makers. However, due to RGGI's political roots and history, not all states are created equally, New York, New Jersey and Massachusetts seemed to have the most clout, at least as far as the design of the Model Rule was concerned.

In practice, the people who were at the table on a day-to-day basis were staff of the State Environmental Protection – Air Regulation Offices. The RGGI Staff Working Group Subgroup Chairs were all Air Regulators. As a result, a key determining factor for the basic design of the Model Rule and the measures being considered was the jurisdictional authority of the Air Regulators. Discussions of the electricity sector as a whole, or how to control imports of electric power from fossil generators in non-RGGI states was met with statements like: 'we don't have jurisdiction over the imports of electricity so there is nothing we can do about that.' It is unclear to what extent the electric utility regulators participated in the Model Rule process, but a lack of involvement could turn out to be a critical factor in the final design choices being made.

### **Model Rule Decision Process**

The Model Rule decisions were made behind closed doors by the RGGI State Working Group and Subgroup Chairs. No preliminary decisions were announced prior to August 2005, and even then these were subcommittee proposals. From the outside, it appeared that all the critical decisions were made at one time so there was little opportunity for contingency plans based upon the direction deliberations appeared to be taking. Given that renewable energy and energy efficiency were viewed as relatively unimportant in the larger scheme of decisions to be made (E.g. Opt-in provisions, Compliance period, Banking, Borrowing, Offset Provisions, Penalties, Monitoring & Reporting, Regional Emissions Cap, and State Allowance Budgets); it was hard to get the decisions-maker's attention. Advocates had to try to estimate how the rules would play out and how their issues might fit into the final model without knowing what the final model would look like. Advocates had the choice of: (1) Proposing one solution and hoping it fit into the model selected, (2) Proposing different solutions for different model scenarios and

hoping the decision makers would choose the appropriate one; or (3) Just push for a concept and fill in the details later. This ‘just in time’ method of decision-making made it particularly difficult for stakeholders (outside of the emitting facilities) to effectively influence the model rule.

In the final analysis, it also made it difficult for the state decision makers since a few key decisions determined whether two of the RGGI states would sign the MOU. During negotiations in the State Working Group, compromises were made in sub-issues that turned out to have been unnecessary since the two states declined to sign the MOU anyway. However, at that point it was too late to go back and revise the previous decisions since this was all one package that had been agreed to by the Working Group. If some of the key decisions had been decided early and vetted through each state’s top decision makers, there would have been more time to work out the sub-issues based on the State commitments.

### **Implementation of the Model Rule**

Implementation of the Model Rule will be on a state-by-state basis. Therefore, even if RE/EE receive favorable mention in the Model Rule, advocates will have to participate in each state to ensure the implementation follows the suggested rule and that the details will yield the desired results. It is still to be seen just how much variation there will be among the states in their interpretation of the Model Rule. State implementation will be the real test of how effective a regional framework can be in guiding GHG reductions.

### **Stakeholder Representatives**

The stakeholder representatives were selected from the northeast environmental community, other interested state agencies, consumer representatives and companies that owned emitting generation facilities in the region. The environmental representatives had the dual role of representing both the interests of energy efficiency and renewable energy. There was really no public interest organization that solely represented renewables on the stakeholder sub committee. Though the environmental groups did a good job of trying to be even handed and helping to deliver proposals from the RE community, still if push came to shove it was apparent their first priority was energy efficiency. Therefore, if the two were lumped together in one policy strategy (i.e. a consumer set-aside) but it turned out that the size of the set-aside was insufficient to meet both EE and RE demands, this would put the environmental representatives in a difficult position, both in public and private conversations with decision makers and the EE/RE constituents. Not having a renewables representative on the Stakeholder Committee was a distinct disadvantage.

### **The Influence of IPM Modeling on the Outcome**

As is quite common, the modeling assumptions greatly influenced the Model Rule results. Key among these was the modeling of ‘leakage’ or power imports from non-RGGI states. As long as the model showed leakage to be at an ‘acceptable’ level and/or declining over time, there was justification for air regulators keeping control of the Model Rule. Had the modeling indicated a significant ‘leakage’ problem that escalated over time, the only option for controlling it would have been to include the electricity regulators to a significant degree in RGGI Model Rule design and implementation,

possibly resulting in an output or load based cap-and-trade design rather than one focused on emitting generators.

The second significant influence modeling had on the Model Rule had to do with simplifying assumptions. These simplifying assumptions included such things as: (1) Assuming all RGGI state RPS programs have reached their targets in year one; and (2) Choosing a starting year as the benchmark that had carbon emissions much lower than the historic average. As a result, based on this modeling, it would appear that less stringent GHG reductions were needed than might actually be the case, probably causing the price for allowances in the first few years to be very low or zero thus undermining some clean energy strategies such as selling allowances to obtain money for Clean Energy Funds, energy efficiency and other public goods. Low allowance prices and little change in GHG emissions during the first three to five years could also undermine public support for the whole RGGI program.

### **State Renewable Portfolio Standards and GHG Reduction Programs**

The interaction between GHG reductions and Renewable Portfolio Standards (RPS) came into play in two ways. First, different states have different goals and approaches to RPS, for example, in some states the RPS program is not designed to yield any GHG reduction benefits because renewables used for compliance do not have to keep their environmental attributes bundled with the energy purchased by the utility. In that case, the state RPS program should not be modeled as though GHG reductions will result. Second, the simplifying assumption (mentioned above) that all RPS targets will be met in the first year could, as mentioned earlier, cause more allowances to be issued than necessary and artificially depress the value of those allowances in the marketplace. The other associated issue is that RPS targets might never be fully realized making updates of the cap calculation an important action (though it is not rule at this time contemplated in the model rule).

### **Secondary Issues that Influenced Decision Makers behind the Scenes**

There were several secondary issues that strongly influenced decisions: (1) Air regulators did not want to give allowances to nuclear or large hydro; (2) They wanted the model rule to look as much like the SO<sub>2</sub> and NO<sub>x</sub> Cap and Trade programs as possible to eliminate complexity and make implementation as simple as possible; (3) They realized that negotiating the GHG cap would be contentious and did not want to have to revisit this topic even if it meant not correcting for real world events; and (4) The regulators want the cost of allowances to be as low cost as possible so the program will be less controversial politically.

The concern about nuclear and large hydro is probably regional and could for the most part be taken care of through applying additionality criteria for all offsets and clean energy allowances. We incorporated additionality criteria as part of the specifications for eligible renewable facilities and believe that if applied uniformly, this would be a reasonable approach. However, we do understand the concern of setting a precedent for these technologies that already get many subsidies and are actively seeking expansion in the northeast. Regardless, this concern eliminated several good options from

consideration (E.g. An output- or load-based allowance allocation system; and possibly a Public Benefit Set-aside with significant allowances for energy efficiency and renewable energy).

The second issue was implicit rather than explicit in discussions with air regulators of Model Rule design options. It seemed to us that the regulators felt overburdened, understaffed and did not want to have to develop a new cap and trade system or even change the one they had very much if they didn't have to do so. They know how to operate a SO<sub>2</sub> Cap and Trade program and it would be much simpler to do the carbon system the same way. Unfortunately, there are a number of factors that make this a bad idea not only because of its effects on renewables and energy efficiency but also because carbon reduction options to emitters are considerably more limited and expensive than for SO<sub>2</sub>. If you really want to effectively and efficiently reduce carbon emissions from the electricity sector, it requires reforming the whole sector not just putting pressure on current emitters.

Revising the GHG cap to reflect real world changes will have to happen at some point but this is more a political issue than a technical one. It might be managed by evaluating changes that have occurred at the state and then combining the results at the regional level rather than having a regional discussion first. We assume this will happen every three years, however we have not seen any explicit language. The fear is that once the cap is reopened there is the risk of losing the whole program.

The final issue of the cost of allowances is a concern no matter who manages the program or how it is organized. However, it may be a bigger issue for air regulators than for energy regulators. The reason for the difference is that utilities (and their regulators) are concerned about the impact of GHG reductions on electricity rates rather than the cost of GHG allowances per se. Emitters (the primary constituents of air regulators) are primarily concerned about what allowances will cost them. The fact that electricity rates would increase (and therefore the emitters would receive additional revenue for their power) is seldom mentioned. This is really a key issue when thinking about what venue might be best for dealing with GHG emission reductions. This issue underscores the importance of having both air and energy regulators at the table.

The issue for air regulators is compounded by the fact that GHG emitters presently have few options for controlling emissions. As a result, the opportunity to significantly ratchet down GHG emissions over time will be much more limited under a generator based system than for SO<sub>2</sub> or NO<sub>x</sub>.

## **STRATEGIES FOR INTEGRATING RE INTO THE RGGI PROGRAM**

There are a variety of strategies that can be successful for integrating renewable energy into GHG reduction initiatives. Which one(s) are chosen depends upon the underlying model for GHG reduction that is selected by the decision-makers. Moreover, as expected, implementation details are critically important in this process. Options for RE set-asides were written into both the SO<sub>2</sub> and NO<sub>x</sub> legislation and apparently sounded

good to RE advocates at the time. However, the implementation didn't result as the RE community had thought.<sup>16</sup>

### **Obstacles**

The RGGI experience has shown how important the initial decisions are. The framework established by the Staff Working Group in the Action Plan decided the general scope of the program. While allocation was ultimately left up to the individual states there was never any serious effort to allocate allowances to all generators rather than emitters. Organizations such as CRS arguing for the role of the voluntary market faced an uphill battle on three fronts. First, the voluntary market while growing rapidly is still very small compared to absolute electricity sales. Second, existing cap-and-trade policies for GHG emissions and other air pollutants have almost entirely utilized the principle of allocating allowances to emitters. And third, environmental organizations that traditionally support renewable energy are often focused more on energy efficiency and may be opposed to an output-based allocation scheme for a variety of non CO<sub>2</sub> issues. In short, renewable advocates are focused on the consequences of a policy for a currently very small segment of the electricity sector, and proposing that the entire scheme be changed (e.g. from emission to output based allocation), which requires a large base of support, not an easy task.

### **Overcoming the Obstacles**

The obstacles mentioned above can be overcome but this requires thoughtful, time consuming work and understanding the opportunities available. First of all, large business and institutional buyers are increasingly turning to the voluntary market for renewable energy to support their commitment to environmental goals, among them reducing greenhouse gas emissions. These companies often receive exposure from state and or federal governments for their voluntary actions. Including representatives of companies that buy renewable energy in our working groups could help demonstrate how the inclusion of the voluntary market in any cap-and-trade scheme is important not just for renewable generators but for large commercial purchasers as well.

The legacy of policies in the environmental arena might be difficult to overcome, but it has also served to show how these policies did not always work as intended. In order to prevail over the common wisdom renewable advocates need to show: 1) How these policies really worked (especially for renewables in acid rain schemes), and 2) Why greenhouse gas emission policies are fundamentally different. Methods to reduce GHG emissions are often not technology fixes but found outside of the regulated sector, due to the systemic nature of the problem. This is different from the technological improvements furthered by acid rain programs (such as scrubbers in smokestacks etc.). This is an example of a point that should be made to argue for allocations to renewable generators and energy efficiency, tools critical to CO<sub>2</sub> reductions in the electricity sector. In the RGGI process this argument was made, but renewables were caught between

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<sup>16</sup> U.S EPA, Office of Atmospheric Programs, Climate Protection Partnerships Division, *State-Set Aside Programs for Energy Efficiency and Renewable Energy Projects Under the NO<sub>x</sub> Budget Trading Program: A Review of Programs in Indiana, Maryland, Massachusetts, Missouri, New Jersey, New York, and Ohio (Draft Report)*, September 16, 2005, EPA 430-R-03-005: 3



inconsistent logic. They were not given allocations as a power generator but since they are part of the electricity sector, they are not eligible for offsets either.

Finally, CRS included renewable generators and marketers in addition to environmental organizations in the renewable energy working group. This served to breach some of the gaps between the priorities of the different groups. However, the fact that renewable generators fall in the same 'emissions free generation' category as 'big hydro' and nuclear generators remains a significant obstacle for cooperation with environmental organizations. Solutions that avoid the confluence of nuclear/hydro and renewable energy interests should be identified. Renewable energy advocates should also look toward including more developers, financiers and other members of the renewable energy industry to expand the coalition.

## **LESSONS LEARNED**

### **Finding a Greenhouse Gas Reduction Strategy for the Electricity Sector**

*From a renewable energy and energy efficiency perspective, the best cap and trade strategy to use, of those we have heard discussed or suggested, is either an Output or Load-based Cap and Trade system.*<sup>17</sup> From our observations and analysis to date a load-based system is probably a preferable strategy from the greenhouse gas reduction perspective as well since this approach offers more options for reducing greenhouse gas emissions, is a more inclusive and transparent policy, and eliminates 'leakage' problems associated with most other state/regional GHG cap and trade policy options.<sup>18</sup>

Aside from the programmatic CO<sub>2</sub> reduction benefits mentioned above, we believe these are the best systems for renewables because they would convey greenhouse gas allowances/offsets to all 'additional' renewable power purchased by complying energy service providers, and incorporate more incentives for load-serving entities to build or purchase renewables because, especially in the west, they may be the least cost option. However, designers of a load-based cap-and-trade scheme would still need to consider how the voluntary market would fit in with the overall scheme.

### **Which Decision Makers and Stakeholders Sit at the Table?**

An Output- or Load-based Cap and Trade program is only going to happen if electricity regulators are part of the decision process. Air regulators have no jurisdiction beyond emitting facilities that they regulate and so would have no jurisdiction over electric utilities or emitting facilities located outside their state's jurisdiction. Moreover, air regulators are primarily concerned about the cost of compliance for emitters while electricity regulators are concerned about costs spread over a much larger ratepayer base. Finally, electricity regulators are aware of and value other benefits that may accrue to electricity consumers from renewables and energy efficiency that may counterbalance

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<sup>17</sup> Cowart, Rich, *Another Option for Power Sector Carbon Cap and Trade Systems - Allocating to Load*, Concept MEMO submitted to RGGI, May 1, 2004 ([http://www.rggi.org/docs/allocating\\_to\\_load.pdf](http://www.rggi.org/docs/allocating_to_load.pdf))

<sup>18</sup> In a Load-based CO<sub>2</sub> Cap & Trade program: whatever the location of the emitting generation from which the load serving entity is purchasing electricity, those carbon dioxide emissions would be counted against the cap

some increases in cost. Therefore, it is extremely important that electricity regulators play an active and central role in the design, decision-making and implementation of CO<sub>2</sub> reduction programs.

Second, make sure renewable representatives have a seat at the table as program is conceived and developed. Lack of that platform in the RGGI process has made it more difficult to get our story and proposals before the State Working Group in a credible manner. That said we have been very fortunate in having several well informed and competent people carry our message for us but that may not always be possible in other venues. Though we may not have been officially at the table, we did organize the renewable energy community and were involved in the RGGI activities from early in the process. Renewable stakeholders should be involved early and consistently throughout the process to be effective.

### **Establish the Framework for the Cap & Trade Program Early in the Process**

As discussed in the RGGI narrative, if all of the decisions are left to be decided at the end, it makes for a very inefficient process and is likely to result in a less than optimal product. For an opposite example, the California Public Utilities Commission has just issued a draft opinion to develop a Load-based cap-and-trade program to reduce greenhouse gas emissions.<sup>19</sup> Regardless of which program model they had selected, stakeholders now know the type of framework for which they must tailor the supporting options and implementation details. Moreover, if other key decision-makers (e.g. the Governor's Office, the California Environmental Protection Agency) and stakeholders do not agree with this approach, they have the opportunity to comment and possibly change the direction before a lot of time and resources have been spent on sub-issues and implementation details that may not be relevant to another model. Early establishment of the cap-and-trade program framework will lead to more efficient use of resources by all parties as well as resulting in a more coherent and effective program with broad stakeholder support.

### **Interaction between Renewable Energy and Energy Efficiency is Important**

Though renewable energy and energy efficiency advocates are most often different people from different organizations, their underlying motivations and issues are closely aligned. On the other hand, the strategies needed to meet the end goals of each may be quite different. It is important that representatives of the two groups work closely and support each other's agendas. But it is even more important to ensure that they are not marginalized and pitted against each other for a few scraps from the table. Both renewables and energy efficiency have important roles to play in electricity greenhouse gas reduction programs and should be an integral part of the overall framework process.

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<sup>19</sup> CPUC, *DRAFT DECISION OF COMMISSIONER PEEVEY. Order Instituting Rulemaking to Promote Policy and Program Coordination and Integration in Electric Utility Resource Planning - Opinion on Procurement Incentives Framework, Rulemaking 04-04-003, Filed April 1, 2004.* San Francisco: Mailed 1/13/2006. ([www.cpuc.ca.gov/PUBLISHED/COMMENT\\_DECISION/52819.htm](http://www.cpuc.ca.gov/PUBLISHED/COMMENT_DECISION/52819.htm))

### **Incorporate Incentives for Utilities to go beyond State Mandates**

A generator-based cap and trade program provides few if any incentives for electric utilities to go beyond renewable mandates or programs they already have unless renewables are included as part of an offset program. Unfortunately in the case of RGGI that did not happen. A load-based cap and trade program provides incentives to the load-serving entity to use renewables, energy efficiency, whatever is most efficient and cost effective.

A well designed set-aside program can also provide renewable energy and energy efficiency incentives. “Well designed” is the operative phrase and we have few if any well-designed set aside program examples as models.

### **Incorporate Strategies to Support the Voluntary Renewable Energy Market**

Voluntary renewable energy markets include: *renewable energy* sold directly to retail customers in restructured electricity markets, renewable energy *certificates* sold to retail customers in both restructured and monopoly markets, renewable energy that is sold to consumers through *utility green pricing programs*, and renewable energy *certificates* that are translated into pounds of carbon equivalents and sold in voluntary *carbon markets*. It is estimated that in 2004, the voluntary market resulted in more than 6 million MWh of renewables purchased nationally.<sup>20</sup>

Renewable energy and renewable energy certificates are purchased in voluntary green power markets both to reduce greenhouse gas (GHG) associated with a customer’s electricity purchase but also to offset GHG produced by commercial, industrial, institutional and residential activities. The non-residential sector is growing rapidly and is the sector that is especially interested in the carbon offset benefits of renewables. Renewables are used to offset carbon produced by manufacturing/fabrication, food processing, carbon resulting from travel (including air travel), various natural gas usage, etc. Carbon offsets associated with renewable power can also be used to offset smaller fossil-fueled self-generation (not included in most electricity carbon caps). Finally, the renewables located in a state with a GHG Cap and Trade (C&T) program can offset carbon produced by electricity generators in areas without a C&T program. All of the carbon emissions described above are produced outside the electricity sector where the carbon C&T program is located but can be offset by allowances allocated to renewables (or energy efficiency) participating in the program.

If renewable energy receives carbon allowances and sells them to consumers or GHG emitters that are not included under the cap, this has the effect of reducing the cap (i.e. you are reducing the number of allowances available for purchase by electricity generators that emit GHG). As a result, polluting generators must do something else to reduce their GHG emissions such as adding control technologies or cutting back operation. That means there are more real carbon reductions in the electricity sector than anticipated through the establishment of the cap alone.

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<sup>20</sup> Bird, Lori & Blair Swezey, *Green Power Marketing on the United States: A Status Report (Eight Edition)*, Technical Report. CO: NREL/TP-620-38994, October 2005, p. 16.

Many decision makers are not familiar with the workings of the voluntary renewable energy market or its size. Therefore it is particularly important that renewable and energy efficiency advocates ensure that voluntary renewable energy market consumers are able to receive credit for the carbon dioxide benefits associated with their purchase. Though that may be a bit more complex than is the case for other renewable transactions, it is just as important.

**Those that Invest the Money should receive the Benefits**

An overarching principle, as far as greenhouse reduction programs are concerned, is that those that invest resources in renewables and energy efficiency should receive credit for the greenhouse gas benefits that result from those investments. If a new renewable energy facility is constructed and operated by an independent power producer, the emitting fossil generators should not receive extra allowances or revenue as a result. If retail customers buy renewable power (or certificates) for the purpose of reducing their greenhouse gas footprint, there should be a mechanism for them to receive credit for those reductions through the program/registry.

**APPENDICES:**

Appendix A: CRS 2004: *Approaches to Integrating Renewable Energy into Greenhouse Gas Trading Programs*

Appendix B: Issue Papers

Appendix D: CRS 2005: *Off the Top Approach*