November 30, 2010

VIA EMAIL: info@rggi.org

Regional Greenhouse Gas Initiative, Inc.
90 Church Street, 4th Floor
New York, NY 10007

Re: Comments on Modeling for 2012 Review;
New Directions for RGGI—2011 and Beyond

Dear RGGI, Inc. and RGGI State Governors, Commissioners and Staff,

The Pace Energy and Climate Center appreciates the opportunity to comment on vitally needed new directions for RGGI at this critical juncture. We also welcome the chance to offer suggestions and raise clarifying questions about the modeling assumptions to be embedded in the new analyses of possible RGGI program alternatives going forward.

So far RGGI has been an excellent precedent for a national carbon cap and trade program. It has demonstrated for two years that:

- There is broad political support for serious action now to combat climate change;
- A large carbon cap and trade program can be fairly and effectively administered;
- Auctions of all of the allowances can be conducted in an open way creating an efficient and liquid market that—for two years—has exhibited (a) no signs of market power being exercised, and (b) no difficulty for regulated entities acquiring adequate allowances in a low risk, efficient and timely manner through the auctions and the secondary market;
- A system can be established for ensuring the integrity of offsets, and that those offsets can be administered in an efficient manner.

These are prodigious results. What is now being tested is the ability of this system to dynamically repair itself. Any program, especially a new one, makes mistakes, and that is true of RGGI. The one important element that the RGGI system did not do well was accurately setting the cap to reflect actual baseline 2009 power sector emissions for the region. RGGI also failed to establish protocols for regulating or

adjusting the number of allowances to be made available for auction if the need arose—a mechanism that could be employed to correct the cap's current inflation. This has been a problem with other cap and trade programs as well, and how RGGI solves this issue could prove of fundamental value not only to the integrity of the RGGI program but to other cap and trade programs as well.

I. First Things First. It is essential that RGGI state leaders officially recognize the ongoing "over-allocation" problem and take rapid action to correct it. What was initially an unfortunate and understandable programmatic estimating error is threatening to become administratively irresponsible. There are a number of approaches that can be considered for longer-term, structural solutions to establishing the cap, but it is essential that RGGI immediately stop the flood of surplus allowances that it is issuing. Failure by the RGGI states to act during 2011 will jeopardize not only the operational integrity of the program going forward, but also the precedential value of all that has been accomplished since it will allow opponents of climate action to cast all of the RGGI accomplishments as somewhat unreal. Failing to take decisive and immediate action to address this problem will result in a scenario in which the program—at least for purposes of in fact stabilizing and achieving substantive CO_2 emissions reductions—may become irreparable. The good news: it appears we are not past that "point of no return", yet.

Each auction so far has offered to the market many more allowances than are needed to cover that year's emissions—for the first compliance year (2009) actual emissions were 34% below the total number of allowances made available.[1] If this holds true for 2010, then about 2/3rds of a year's worth of "surplus" allowances will have been made available—allowances that are above and beyond what emitting units require to cover their actual emissions during that period. These allowances, totaling 128 million "surplus" allowances, can be banked and used or sold in succeeding compliance periods.[2]

If there are indeed some 128 million surplus allowances from the first two years of RGGI, that means that if RGGI cancels all further auctions in 2011 and hands out no new "special approval" ones, and if emissions for years two and three (2010 and 2011) are in line with actual emissions for 2009, the original RGGI goal of "holding emissions steady" for the first compliance period will have been met.

The RGGI states are under no compulsion to release all of the allowances they have apportioned among themselves. Just as a small number of allowances have been reserved because they could not be sold at or above the reservation price, so also should the RGGI states work together to establish a new, programmatically responsible schedule of allowances to be released in 2011—possibly negating the 2011 auctions entirely. A better alternative would be to reduce by 50% the allowances offered in 2011 and 2012 and then recalibrate. The RGGI states should probably start by announcing that the allowances reserved will be immediately retired—that is just a small, but very important, first step, and appropriate forewarning to the market that more substantial corrective action is on the way.

[1] Apart from auctions, a significant number of allowances are also made available through "special approvals" established by the individual RGGI states, including: set asides for early reductions, voluntary renewable energy sales, special prices for regulated units, and long-term bilateral contracts.

[2] Not all of the allowances have been sold, so this number is not precise.

II. Proposed Changes for 2012 and Beyond

Given the very significant, and inherently difficult to predict, variability in CO_2 emissions, and given that emissions have been so much lower than originally forecasted, some kind of fundamental, structural change to the cap is essential to maintaining the integrity of the RGGI program. Although RGGI may have committed some missteps that exacerbated the over-allocation of the cap, some potential problems are inherent in a cap and trade program where the regulated emission's volume has significant, unpredictable variation—as is the case with CO_2, particularly at the local or regional level.[3]

In addition to the points listed below, Pace concurs with and endorses the three core suggestions advanced by Environment Northeast to address the currently inflated cap: 1) ratchet down the cap to start at *actual* 2009 emissions of 123.7 tons; 2) establish RGGI reduction targets of 20% by 2020 and 40% by 2030, as the prevailing climate science concludes is necessary to avoid the worst impacts of climate change; and 3) further adjust the cap to account for the large volume of already banked allowances.

There are a number of options for handling the cap option as a part of the RGGI 2012 Review. A number of them are not mutually exclusive, and may make sense on their own for other reasons:

1. **Fix the Cap**. The most direct, obvious and important action is to lower the cap to conform to present and prospective reality. This is necessary for the two reasons already discussed. First, actual emissions at this point in time are much lower than the cap—even when accounting for the economic recession.[4] Second, the volume of allowances already in circulation grossly exceeds current emissions trends, a reality that must be compensated for as RGGI states revisit the program. This can be done most directly by lowering the number of allowances made available. But there are other, less direct ways of making the cap more realistic while achieving other goals as well:
    a. Expand RGGI to other sectors, such as other significant stationary sources, electric generating sources not currently included in RGGI, and/or transportation, while fine-tuning the new cap to take into account current emissions and the huge existing surplus;
    b. Harmonize/Link RGGI with another regional CO_2 programs, and, as above, fine-tune the resulting combined cap to take into account current emissions as well as the extant surplus. *It is important to note that, based on discussions to date, other programs such as the Western Climate Initiative(with a launch date of 2012) have little or no interest in any such linking until the RGGI cap inflation is corrected for.*
    c. Add responsibility for full fuel-cycle CO_2 emissions to the currently regulated electric generating units. This additional allowance obligation would reduce the gap in a small

[3] Check to see if CO2 emissions are more stable at the national level—in which case how we handle it at the RGGI level is of much less precedential significance.

[4] See RGGI Inc. Draft White Paper—11/2/10: "Relative Effects of Various Factors on RGGI Electricity Sector CO2 Emissions: 2009 Compared to 2005", prepared by NYSERDA and available at: http://www.rggi.org/docs/Retrospective_Analysis_Draft_White_Paper.pdf

way, but as with the preceding two options, may be desirable primarily for other policy reasons.

d. Raise the reservation price much closer to the estimated long-term equilibrium price for allowances. One option would be to have the reservation price fine-tuned year by year, or possibly even more often. An alternative way to approach it is to set the reservation price high enough so that the surplus—according to updated modeling—will be worked off in several years.

e. Establish a symmetrical "price collar" that sets a lower limit and an upper limit for the prices of allowances. [5] A price collar would essentially add a price "ceiling" to some form of reservation "floor". Price collars were designed to provide stability to the price of allowances. Currently RGGI has a "kind of" price collar in that the reservation price of $1.86 serves as a floor, while there is a double safety-valve at the top which, when triggered by annual average allowance prices hitting $7 and $10, will relax significantly the limitation on use of offsets by the regulated entities. With a collar floor, allowances not sold go into a reserve and only become available if the price ceiling is reached—at which point they become available for sale. In this way, any "surplus allowances" are taken off the market at a price that is deemed to be in the reasonable long-term market range.

2. **Biomass Definitions of Carbon Neutrality.** It is critical that RGGI develop rigorous definitions of "carbon neutrality" for the use of biomass and enforce them through effective state implementation.[6] RGGI has set a very important precedent with the rigor with which it defines offsets, assuring that an offset allowance truly represents a full ton of carbon dioxide avoided forever. It is equally important that it establish similarly rigorous rules for defining when CO_2 from biomass is carbon neutral—and when it is not. Current rules are so loose and so inadequately defined that they will allow credit for biomass carbon-neutrality when that is not the case. With the enormous stores and potential for biomass to energy, this issue could be as significant as the whole set of offset requirements, and "getting it wrong" could negate any modest gains RGGI ultimately makes in actual CO_2 emissions reductions in the region.

[5] For a discussion of symmetrical price collars see Dallas Burtraw, "Addressing Price Volatility in Climate Change Legislation", RFF, Prepared for the US House of Representative Committee on Ways and Means, March 26, 2009, available at: http://www.rff.org/RFF/Documents/RFF-CTst_09-Burtraw.pdf

[6] For an excellent summary of this issue, see Searchinger et al. "Fixing a Critical Climate Accounting Error," Science, Vol. 326, October 23, 2009, available at: http://www.princeton.edu/~tsearchi/writings/Fixing%20a%20Critical%20Climate%20Accounting%20ErrorEDITED-tim.pdf ; also see Mary Booth with Richard Wiles, "Clearcut Disaster: Carbon Loophole Threatens US Forests," Environmental Working Group, June 2010, available at: http://static.ewg.org/pdf/EWG-clearcut-disaster.pdf ; and Manomet Center for Conservation Sciences, "Biomass Sustainability and Carbon Policy Study," Prepared for the Commonwealth of Massachusetts Department of Energy Resources, June 2010, available at: http://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf .

III. Modeling Comments

A cap and trade program establishes its cap by modeling, and that modeling/forecasting has a significant range of unavoidable uncertainty. Even if there is a scientific basis for a cap, that "science" also has a significant range of uncertainty (it too is based on modeling). And in any case, the scientific cap has many paths by which it can be achieved. We note this at the outset as a frame of reference for modeling: no matter how excellent the modeling, it is necessary to build flexibility mechanisms into a good cap and trade program to account for disruptive uncertainty.

1. IPM Model Reference Case:
    a. The reference case is the basic, business as usual, "best guess" model and as such should include RGGI carbon prices at a level that assumes RGGI will do its job and have a responsible program that will do enough to have somewhat reasonable prices. We must assume that RGGI will **not** continue on its current over-allocated path and never compensate for the surplus allowances already sold into the market—but that is assumed in the current Reference Case. The reference case is the baseline for comparing the sensitivity cases and, again, should be a best and most reasonable estimate of where we go. It should *not* be based upon a blind continuation of past errors. Perhaps the best way to frame this point is to observe: RGGI's current Reference Case as it stands now foresees a 24% increase in carbon emissions from RGGI plants from 2010 to 2030!
    b. The New York energy efficiency assumptions should be based upon the avowed goal and forecast of the NY PSC rather than the appropriately conservative assumptions of the NYISO (that it must use for reliability planning). The NY PSC's most recent statements are that, despite some initial administrative delays, it expects to achieve the 15% reduction from the original business-as-usual forecast by 2015.[7] And as the Reference Case modeling assumption is currently listed, what happens to the "missing 50%" that is not assumed to be achieved by 2018—what are the efficiency assumptions for the period from 2018 to 2030? Our concern about getting the New York (and other state) estimates of energy efficiency as right as possible is **not** addressed by the low load growth sensitivity. The reference case should incorporate the best estimates.
    c. We would like a fuller explication of how the IPM models offsets. We would like to know how they are valued and by whom, and whether or not they are automatically triggered by their assumed value, and is there a supply curve for them. Are they treated by IPM as automatically utilized if the allowance price reaches their assumed price?
    d. Does ICF regard the cost and performance assumptions for new nuclear builds to be 50-50 ones—as likely to be under-run as over-run? Does IPM consider the cost assumptions for nuclear to be 50-50 for the years the model would deploy them? Does

[7] *EEPS Second Quarter Status Report*, NY PSC, August 2010. Available at: http://documents.dps.state.ny.us/public/Common/ViewDoc.aspx?DocRefId={E51645E4-875E-4DD5-9FC9-FDBA10D981EB}

the model make any assumptions about the probability of cost over-runs, and about whether project developers or consumers would pay for them?

e. For coal with sequestration we have the same questions that we have for new nuclear units in query "e" immediately preceding.

f. What are the assumptions about retiring Green Island Hydro units and what is the source?

g. Does the IPM model establish marginal (price setting) generating units for each transmission zone? Can they be identified? Does IPM include the then current market price of all allowances used by the marginal unit in the price it sets?

h. The differences among the three ISO/RTOs with regard to type of "unplanned" new capacity addition by 2030 is astonishing: only renewable capacity additions in New England—no new conventional fossil over the next 20 years; 3:2 ratio conventional to renewable for NYISO; and 2:1 conventional to renewable for RGGI/PJM. Further, the ratio of new capacity to existing capacity is dramatically different in the three ISOs by 2030: 15% for both ISONE and NYISO and 36% for RGGI/PJM. What is happening?

i. How does the IPM model simulate capacity markets? Does it simulate a demand curve? Does it forecast energy efficiency as capacity resources, as is current practice in both PJM and NE-ISO?

j. What is the IPM model's assumption about per MWH costs of transmitting electricity from PJM into NYISO and into ISONE?

2. Sensitivity Cases:

a. The Low Load Demand case shows NYISO with a 16% reduction in 'firm power prices" compared to the reference case, while New England and PJM states show much lesser reductions. Is this because the Reference Case already assumes an aggressive efficiency program for Massachusetts and several other New England States, while it models New York with an extremely weak program? Can we get a clarification on definitions of 'firm power', 'energy prices' and 'capacity prices'? Is it possible for IPM to estimate collective consumer electric cost reductions—this would include bill effects for participants in efficiency programs, as well as price (energy and capacity) price reduction effects for all consumers?

b. The comparison of consumer costs in the low demand versus the reference case highlights why it is so important to have the reference case really reflect "best estimates" of what will happen (however difficult that may be). If there were realistic RGGI (or national) carbon prices included in the reference case, the low demand case would be shown to have additional consumer benefits via dramatic reduction of those compliance costs.

3. REMI Modeling

In many ways the modeling described so far by RGGI Inc for the 2012 Review is of very limited value unless it is wedded to models that interpret the economic effects of the modeled results. The four central concerns here are simply huge:

- energy efficiency and demand response as a supply option (rather than as assumed parameters);

- price impacts associated with alternative energy efficiency and demand response supplies;
- employment impacts associated with different energy efficiency and demand response supply options;
- impacts on RGGI allowance prices of alternative energy efficiency and demand response supply options.

The analysis performed originally by REMI for the initial RGGI modeling was pivotal. All modeling performed by RGGI now and in the future will be fatally flawed if it does not at least maintain that original level of analytic depth, if not improve upon it.

The Pace Energy and Climate Center views the Regional Greenhouse Gas Initiative as one of the most important environmental programs in the country. By its very existence and by its excellent design—apart from the cap setting process—it has already moved forward the national and international debate about optimal design for climate cap and trade programs. And RGGI now has the opportunity to redouble that progress by designing solutions to "the cap problem"—an issue with which many cap and trade programs, current and prospective will have to grapple. Further, RGGI should now consider ways to improve the program by expanding RGGI to other sectors and possibly linking its program with other regional and international programs.

Very truly yours,

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