

**Regional Greenhouse Gas Initiative  
Stakeholder Group Meeting Process  
November 12<sup>th</sup> 2004**

NY PSC, 8<sup>th</sup> Floor Hearing Room A  
One Penn Plaza  
New York City

Facilitator: Dr. Jonathan Raab, Raab Associates, Ltd.

**RGGI Stakeholder Group Meeting #5: Meeting Summary**

102 people attended this meeting that began at 9:30am and concluded at 4:00pm.

**I. Materials Distributed and Presented**

Prior to Meeting:

- a. Agenda
- b. Select Offset Slides, *Chris Sherry, NJ DEP*

At the Meeting:

- c. November 30<sup>th</sup> Draft Electricity Markets Workshop Agenda, *RAP et al.*
- d. IPM Reference Case Assumptions and Results, *ICF Consulting*
- e. Considerations in Setting the Level of the Cap:
  1. *Bob Teetz, Keyspan*
  2. *Michelle Manion, UCS*
  3. *Mark Buzel, AES*
  4. *Christopher Powell, UTC*
  5. *Dan Cunningham, PSEG*
- f. REMI Economic Impact Modeling, *Lisa Petraglia, EDRG*
- g. RGGI Offset Process and Prioritization Update, *Chris Sherry, NJ DEP*
- h. RGGI SWG Offset Contact List

All the documents and presentations can be accessed on the RGGI project website:

[http://www.rggi.org/stakeholder\\_schedule.htm](http://www.rggi.org/stakeholder_schedule.htm)

**II. Welcome, Agenda Overview, Meeting Summary Review**

Facilitator Jonathan Raab, of Raab Associates, Ltd. welcomed attendees to the meeting and reviewed the agenda for the day. All those present introduced themselves.

Jonathan Raab then announced that the February Stakeholder meeting will be moved to February 16<sup>th</sup>, 2005 due to school holidays. It will be in NYC at new PSC address or possibly at Foley Hoag in Boston if PSC move is not complete.

Richard Cowart from RAP gave an overview of the RGGI Workshop on Electricity Markets, Reliability, and Planning that will be held November 30<sup>th</sup>, 2004 in New York City at the PSC Hearing Room A at One Penn Plaza. An agenda was handed out and reviewed on screen.

Richard added that if anyone has any comments or input, please contact him at [RAPCoward@aol.com](mailto:RAPCoward@aol.com). Click [here](#) to view the draft agenda for November 30<sup>th</sup>.

### III. IPM Reference Case Assumptions and Results

Karl Michael from NYSERDA introduced Steve Fine and Chris MacCracken from ICF who presented initial model outputs from the reference case. Please click [here](#) to view the presentation.

Steve said the model is a cost minimization model, and set to optimize the system at least cost. He added they will be modeling the effects of energy efficiency programs competing with renewables and conventional generation as policy scenarios.

Steve said that biomass co-firing was not considered in this analysis due to time constraints and will be added in the next round.

During and after the presentation, one or more Stakeholders, Resources, Staff Working Group members, and Observers had the following questions (*Questions in italics*, responses in regular font by ICF, unless otherwise noted):

#### **Clarifying Questions:**

*Is the Ontario RPS in this analysis, and does it assume that coal will be rolled out in Ontario?*

Chris McCracken said they did not assume Ontario Coal would be rolled out. He added that the availability of Ontario wind to meet the RGGI states' RPS requirements was prorated to account for the Ontario RPS.

*How are imports and exports managed in the base case?*

Steve said there are explicit transmission assumptions between all IPM model regions. This includes ten New England markets, five regional markets in the NY ISO, and five markets in PJM. Links between model regions on a national scale are also accounted for. ICF also took into account planned changes to PJM west in the transmission tariff structure.

*Does the model mothball plants that are not economically competitive? What about Renewable Generation built to meet a standard? Do you forecast capacity?*

Steve mentioned that only Oil/Gas Steam units can be mothballed on an economic basis. They are also returned to service on an economic basis – the costs of which include SNCR NO<sub>x</sub> controls. Renewables get full capacity credit if they are fully dispatchable, Renewables that are intermittent such as wind or solar, only receive partial capacity credit.

Steve and Chris explained the reference case resulted in the somewhat questionable result that 4 GW of wind would be built between 2004 and 2006 due to the assumed expiration of the tax credit.

## Clarifying Questions on Results

*On Nuclear, was there any consideration for license renewal, how was that factored into the model?*

License renewal was treated as a specific cost, not automatically assumed, but all units with retrofit or uprate options were assumed to exercise them due to their relative low cost.

*What heat rate did you assume in combined cycle plants?*

EIA AEO 2004 cost and performance of 7400 in 2010 and 7000 in 2015 was used in the analysis.

*You mentioned that you allowed mothballing of oil and gas plants, what about coal?*

No, the assumptions developed by the SWG didn't allow for coal mothballing.

*What did you do regarding transmission expansions or de-bottlenecking (e.g., When new generation is built?)*

In addition to generation capital cost, a transmission connection cost is included for all generation. With wind resources, an additional system integration charge is added to account for the costs associated with increasing amounts of intermittent resources.

*Did results show significant change from today's flow coming from PA into RGGI region?*

We haven't looked at this yet.

*Have new gas transportation infrastructure requirements been assumed?*

For this analysis, the SWG chose to use published EPA transportation and seasonality adders on top of the Henry Hub gas price.. The adders do not change over time, but depending on one's view of the future of pipeline builds over the next decade, it might be reasonable to take into account congestion prices over time.

*You have internalized some transmission costs in renewable projects, but not others. I think you should consider this more carefully. Also, the model does not look at energy efficiency as a resource that the model may call upon. Perhaps this should be considered.*

We'll be taking energy efficiency policies into account in the policy scenarios, but a certain amount of energy efficiency is already embedded in load forecasts provided by the ISOs. The SWG determined that it was reasonable to add increasing integration costs as wind penetration increased to account for the costs of integrating increasing amounts of intermittent wind resources onto the grid.

*Will the model allow comparing forecast gas volume assumptions with the current system?*

We have results at region level, but not down to a pipeline level. The model sites a plant within a region on slide 7. In addition, the model accounts for electricity generating gas consumption

only, although there is an elasticity function to account for the change to industrial demand as a result of increasing gas prices.

*How sensitive to gas prices is the model? Would cost of gas change the generation mix a lot?*

Given that new coal is not allowed in RGGI, and using EIA numbers for nuclear, it's a gas future for RGGI region. It would take a significant change to change that.

*So the model assumes limitless gas at \$4.50/mmBtu*

No – there is a supply curve associated with wellhead gas prices. As more gas is demanded in a given year, the price will rise. Typically – each year has its own supply curve with the general assumption that more gas will become available at a given price point over time.

*Infrastructure cost is based on old transportation costs, but no new infrastructure costs assumed with gas. Is that right?*

As explained previously there are some infrastructure costs implicitly taken into account in the gas transportation adders which are part of the delivered gas price. Moreover, if you believe that additional transmission will be built to serve new generation in a marginal cost based system, the marginal cost should not increase significantly in any case.

*(Follow-up response): I don't agree. If you go through the FERC process, and it has intrinsic value to you, your rate will go up automatically.*

*Do you use different financing assumptions by plant type?*

For new generation or retrofit, regulated vs. deregulated states, inside vs. outside RGGI, the SWG assumed that cleanest assumption would be to assume one financing cost across the board for technologies, rather bias one technology or region. However, for nuclear facilities, assumed 1% higher return on equity and one percent lower return on debt for uprates and retrofits, due to different risk profiles. In addition, differences in project book life among technologies were taken into account.

*On slide 7, you subdivided PJM east into three zones. Can you explain how that affects the model?*

3 zones include PECO, NJ, and the Delmarva Peninsula. Couldn't get information from ISO on 3 zones, so didn't assume binding transmission constraints on those zones, so right now non-binding. We will update if get more information on transmission constraints in this area.

*What is the source of the gas that you are assuming will meet load growth?*

Numerous including Alaska pipeline, LNG facilities in Canada, but we don't have an implicit assumption which particular source the gas comes from.

*What's the assumption about the geographical location of new generation? PJM is now rewarding locational generation, and assuming more will be built in NJ.*

We've taken into account cost differentials of building generation in different places. We also take into account transmission constraints between regions and where generation should be most economically sited, but we are not taking into account some of the things you just said are taking place in PJM.

*When can we see detailed results from reference case and how should we provide input?*

Karl Michael said he is not sure exactly how, but will continue to involve Stakeholders in process. We'll expect to be working in smaller pieces, so won't need 2-3 hour modeling group calls, but Stakeholder comments will be taken under consideration.

*Comment: I request that you provide detail to state level which will provide comfort to Stakeholders that numbers are in the right range.*

*Comment: The base case analysis was excellent and appreciate process to date. I agree that it's important that stakeholders get a chance to look at state based data. Also important that we continue to work on future modeling runs with Karl. Key assumptions need to be analyzed further to give people more confidence in results.*

Karl Michael was asked if it is a good idea to do sensitivity runs before policy runs, and he stated this needs to be discussed further.

*ISOs would like to see what does the model say on retirement for coal facilities. I'm not sure if the retirements assumed allow us to run the system. And are we making unrealistic assumptions on the amount of gas capacity we can add to the system?*

Model will allow for retirement of coal, but not mothballing of coal plants. We can make the retirement results available to the ISO.

*Are you planning on changing the assumption that 4GW of wind will be built by 2006? Maybe it gets phased in more gradually, as it seems unrealistic.*

Karl said the decision is up to the Staff Working Group, but one thing we can do is change our assumption with the Production Tax Credit. Another is to set hard limits. He added they will consult Bob Grace and others on this matter.

*Is there an assumption on mothballed coal plants coming back into service? How does it fit in with NSR issues?*

Only oil/gas steam generation are allowed to mothball on an economic basis, not coal. However, coal facilities can be retired. As previously mentioned, the return to service cost includes the installation of SNCR NOx controls to account for NSR concerns.

*Does the model assume that it takes a certain number of years to construct a new plant?*

Yes, both internalized into capital costs through interest during construction, and explicit lead-time is taken into account as to when the plants come on line.

*We didn't see the base case forecast of retail power.*

Only a wholesale model, and will have wholesale price forecasts, but not retail.

*On gas pricing, have we thought about letting the model tell us what gas prices will be?*

The model uses gas curves, so as we go up the supply curve there's a price response, but it's unclear how much the region will affect national prices.

*I suggest that we revisit even financing costs of new generation across the country.*

*How realistic are super critical coal figures? Are they in line with technology capabilities?*

We didn't allow super critical coal until 2010. One stakeholder said costs were in line with their experience. But this is one of the things we will likely revisit.

*How much experience factor do you have with the model? How reliable are new build outs of model?*

We've used this model for many years, and for many purposes. It is the primary model used by the US EPA to conduct air regulatory analysis, and has been used for many private sector engagements including due diligence to support project financing and regulatory testimony. We are confident in the model.

*I'm concerned that energy efficiency doesn't seem to be incorporated in the analysis..*

Karl Michael said this is a reference case, assuming status quo. In the policy case, we have every intention to incorporate additional energy efficiency.

#### **IV. Options and Rationale for Selecting Cap and Trade Level Requirements**

1. Several Stakeholders were asked in advance of the meeting by Jonathan Raab to prepare comments on the following 3 questions: What are the major factors/principles that should be taken into consideration when setting the cap levels?
2. Where does this lead you in terms of recommending where the actual cap should be set?
3. How should the cap change over time, and what other cap-related mechanics do you think are important?

The purpose of the prepared remarks was to provide a range of perspectives that would then kick-off a broader discussion among the stakeholders related to setting caps. The presenters are listed below, along with links to their presentations.

1. Bob Teetz of Keyspan. Click [here](#) to view the presentation.
2. Michelle Manion of UCS. Click [here](#) to view the presentation.
3. Mark Buzel of AES then presented a perspective. Click [here](#) to view the presentation.

*When you compare costs between RGGI States and non-RGGI states, do your numbers include imports?*

Mark said, no, his analysis just looked at in state figures.

*Another Stakeholder responded that RGGI would have more of an impact on reducing national carbon emissions if there was less leakage from PA and MD into RGGI.*

4. Christopher Powell of United Technologies then presented a perspective. Click [here](#) to view the presentation.
5. Dan Cunningham of PSEG then presented a fifth perspective on the Regional Cap. Click [here](#) to view his presentation.

Following the 5 presentations, Dr. Raab opened the discussion up to the Stakeholders, Resources, and Staff Working Group by observing that if you added Michelle Manion's recommendation to set 2020 caps at 20-30% below 1990 levels to the options on Dan Cunningham's slide #7, it appears you would capture the range of the recommendations.

Following are the statements made by Stakeholders, Resources, Staff Working Group members, and Observers:

*We know we won't get impacts right for every scenario. So, we should build in the idea of automatically ratcheting down over time in the direction we need to go, recognizing that we don't know all the contingencies, so build in circuit breaker or accelerator. Need to get a flat demand curve simultaneously with imposing carbon caps to avoid intolerable impacts. We also need to ensure we invest in energy efficiency and other technologies to reduce emissions.*

*Several speakers referred to how good the RGGI region has been in reducing emissions since 1990. My perception is that's a byproduct of us using least cost fuels available more than targeted new policies and programs.*

*Based on Michelle's presentation, we should get on a glidepath to achieve deep reductions needed. We need a 20% reduction from today's levels (similar to 1990), get on that pathway soon, and give folks time to make adjustments they need. Looks like RGGI program won't start until 2008 or 2010. Makes sense to us to have 4% reduction every other year to reach cap target. ENE will send out a memo shortly describing this in more detail. There's a lot of uncertainty how we're going to achieve these results. Having a circuit breaker at a certain cost threshold makes sense to us, as we understand we can't break the bank to implement this.*

*I'm encouraged by the responses from Stakeholders. Less divergence than some originally thought. It may be possible to come up with trajectory suggested by UCS but sensitive to UTC and generator concerns. Concerned about speculating what others may or may not do. For energy efficiency, consider how we can incentivize economically advantageous programs that make businesses more competitive, and reduce the costs of implementing RGGI.*

*It's important that states consider what may happen in the national policy arena. We're in favor of a slowly declining cap vs. big step reductions. Flexibility measures may make or break the program. Don't over-constrain innovation and offset programs. Compliance flexibility or circuit breaker process is important (e.g., CT). Everyone recognizes value of energy efficiency, but no one has come up with perfect way to incorporate energy efficiency into the system.*

*I'm resonating a RGGI process that can influence the rest of the nation. Are people thinking RGGI adopt a lowest common denominator cap so that other states join? If so, why can't a*

*stronger cap exist in RGGI and a weaker cap in other regions? (e.g., similar to different state RPS programs). We need to build energy efficiency and renewables into RGGI since it's not possible to expand gas to whole country. Makes no sense to expand RGGI and reward polluters on our borders for continuing to emit. Need to address leakage.*

*I wanted to address the suggestion of a longer true up period. The longer the true up period is, the lower the level of market liquidity. The cost of illiquid markets can be very high. We've seen decreasing liquidity in last 9 months in SO<sub>2</sub> trading, and increasing spread between buyers and sellers in excess of \$50/ton which is painful, and adds a high additional cost. So I'd encourage people to look at this carefully. We also emphasize transparency and clarity, and surprise shocks should be avoided. Double counting energy efficiency should be avoided, as it will corrupt the cap. Leakage in theory—pricing differentials between power pools—needs to be addressed in reality-- what capacity can power actually move into the pool.*

*Implementing 2008–10 timeframe allows us to learn from EU experience, which is good. It would be helpful if PSCs could work into rate system so that T&D systems can recoup costs from efficiency improvements. We should avoid over-reliance on one fuel, and circuit breakers should be available.*

*RGGI should do what's best for RGGI region, and if a national program goes forward, RGGI folks will defend RGGI interests, and there may be a carve out for the region, to avoid any negative impacts of a national program like there was for CA in the Clean Air Act Also, even if RGGI region acts differently than other parts of country (e.g., output allocation, updating) other parts of the country will protect themselves from any undue adverse impacts.*

## **VI. REMI Economic Impact Modeling**

Dwayne Breger of MA DOER introduced Lisa Petraglia of the Economic Development Research Group, who gave a presentation on Modeling the Economic Impacts of Regional Greenhouse Gas Initiatives With a REMI Model. Click [here](#) to view the presentation.

During and after the presentation, one or more Stakeholders, Resources, Staff Working Group members, and Observers had the following questions (*Questions in italics*, responses in regular font by Lisa Petraglia, unless otherwise noted):

### **Clarifying Questions:**

*What are the 12 states REMI models?*

9 states in RGGI +PA, MD, and D.C.

*Do you have a list of baseline inputs that REMI uses to create out of box projections?*

Yes, those are being looked at by MA DOER. Some macro drivers in IPM model too. We want to ensure there's consistency where there is overlap with IPM. Data is national, regional, and state specific. Most is from public sources.

*Is there an established body of literature on economic value of health impacts?*

Sonia Hamel of MA OCA said that standards are used nationally. EPA is developing a Cobra model now to evaluate benefits of improved air quality. We'll use consistent methodologies.

*Do you explicitly capture differentials in multipliers (in WI example).*

Retail usually has lower multipliers than fuel or extractive industries.

*From a methodological point of view, can you explain differences from energy efficiency investments?*

REMI captures relative change to cost of doing business in that state.

## **VII. RGGI Offset Process and Prioritization Update**

Chris Sherry of NJ DEP presented an Update from the Staff Working Group on Potential Offsets. Click [here](#) to view his presentation. He then asked the Group for feedback on the initial list of offset types on page 3 of his presentation that are undergoing detailed evaluation by the SWG:

One or more Stakeholders, Resources, and Observers had the following feedback (*comments and questions are in italics*, and responses are in regular font from Chris Sherry, unless otherwise noted):

- *I'd like to see nuclear uprates treated as an offset because air quality and GHG benefits*
- *Many of these offsets could be introduced in phase 2 of RGGI*
- *For end use energy efficiency, should add T&D efficiency*
- *Non Anthropogenic sources should also be considered (e.g., cow burps)* [Chris Sherry suggested this was anthropogenically induced, as cows are raised to feed humans and industrial feeding practices impact emissions]
- *How do you calculate SF<sub>6</sub> conversion factors?* [This is very straight forward]
- *ENE said they will submit comments next week.*
- *There's confusion on what an offset is. I think of an offset as an off-system reduction. RGGI is focused on the power sector, so energy efficiency and renewables would be within the capped system. Suggest anything in the electricity sector be taken off the offset list.* [Chris Sherry stated that the SWG is closely evaluating the possible cap-and-trade system impacts of potential offsets within the RGGI region due to electricity end-use energy efficiency and renewable energy. Offsets focused on electricity generation or use have been flagged as potentially problematic based on these system impacts (e.g., "double counting"). He also suggested that offsets could potentially be in the electricity system, but outside of the RGGI region.]

- *Consider adding clean CHP outside RGGI region*
- *Include biomass co-firing outside RGGI region*
- *Include fuel switching outside electricity sector (e.g., switching away from coal)*
- *Transportation projects (e.g., large fleet initiatives)*
- *Be aware of the disincentive you are creating by expanding offsets in RGGI to other sectors as it will make it more difficult to bring them in later because will take away benefits.*
- *Energy efficiency should be allowed as an offset outside cap. And no double counting even within cap if explicitly counted for through end use efficiency.*
- *Why is the list not fuel neutral, regardless of technology?*
- *We re-iterate our support for offsets outside RGGI geographic region*
- *Was there a judgment made as to what should be included on the list? [We're still evaluating the different types of potential offsets. This list does not necessarily comprise the offsets types that will be prioritized for possible inclusion in the program.]*
- *Are you including retrospective projects included in 1605b? [Key issue in ongoing SWG discussions has been additionality. Since retrospective voluntary projects by default represent BAU if credited in a current regulatory program they would not be considered additional based on the common understanding of the term.]*
- *Treat nuclear power "equivalently" to other non-emitting resources.*
- *Nuclear uprates don't pass the "additionality" criteria if so economic, so shouldn't be eligible for offsets.*
- *Consider adding waste management recycling, etc.,*

Chris then requested feedback on the short list of offsets developed by the SWG which appear to have relatively low near-term technical implementation barriers to include in standardized approach in Model Rule:

- Landfill gas
- SF<sub>6</sub> from electricity T&D
- Retired EU Allowances
- Retired CDM Credits

Comments and Questions from one or more Stakeholders, Resources, and Observers are below (*comments and questions are in italics*, and responses are in regular font from Chris Sherry, unless otherwise noted):

- *Many stakeholders suggested this approach was the right one and made sense.*

- *Consider adding fuel switching, because it's real and easily verifiable, and wouldn't necessarily happen anyway. [One member of the SWG asked how this would satisfy additionality criteria, and whether it would better work as opt-in rather than an offset.]*
- *Fugitive methane emissions from Natural Gas pipelines should be included as they are fairly clear-cut. [Franz Litz of NY DEC asked this stakeholder to put together a proposal with references and submit to Chris Sherry and the Staff Working Group.]*
- *End use efficiency should be added as we have substantial experience measuring savings.*
- *Consider setting a date when offset program will start.*
- *Consider adding HFCs to the short list.*
- *Consider an offset program overseen by regional body to ensure consistency.*
- *Not clear on treatment of renewables regarding offsets. For NOx allowances 2 states allow for renewables and 2 don't. I'd encourage giving renewables both CO<sub>2</sub> credits and RPS credits. [Chris Sherry said the SWG's general criteria is that offsets should be additional, that is, they would not have happened otherwise (are not due to BAU). Renewable energy generation projects selling RECs to meet RPS requirements are likely being driven by a regulatory mandate and therefore may not be additional. The SWG is evaluating possible interactions with RPSs that might still be considered additional.]*
- *Are you considering requiring financial additionality on top of regulatory additionality? [There are a number of ways one can define additionality. The SWG is evaluating the issue closely, but has not yet defined additionality for the purposes of RGGI.]*
- *Don't base "but for test" on financial additionality, as it encourages projects from folks who are bad at business, at the expense of better managers.*
- *Don't decide credibility of each offset on a case-by-case basis, as it's easy to game additionality of the system*
- *Look for categories of offsets so you can look at them as a general matter, secondary benefits may be so good, they are worth stimulating. It's difficult to figure out what is additional.*
- *WRI uses a "market barriers" test to define offsets.*
- *Jonathan Pershing of WRI added that WRI process is coming along slowly and may not be ready for this process.*
- *It's more important that offsets are good than that they are available quickly.*

- *Don't want to allow and then later disallow a given offset type. Will cause havoc in the market and lots of uncertainty. Once you let it through the doorway, don't decrease its' eligibility.*

Jonathan Raab then handed out a list of the Staff Working Group contacts for Stakeholders to contact regarding specific offset types.

Chris Sherry then added that if there are specific comments, forward them to the lead Staff Working Group contact on the list, but if there are overarching comments, send them to Chris Sherry at [Christopher.Sherry@dep.state.nj.us](mailto:Christopher.Sherry@dep.state.nj.us).

## **VIII. Next Steps / To Do's**

- Meeting Summary, *Raab Associates, Ltd.*
- Post Meeting Documents on RGGI website, *Raab Associates, NJ DEP*
- Provide more detail on Modeling Base Case, *SWG, NYSERDA, ICF*
- Determine cap levels and policy and sensitivity runs, for IPM modeling *SWG, NYSERDA, ICF*
- Send comments on offsets to SWG leads or Chris Sherry, *Stakeholders, Resources, Observers*

Next Meeting: January 12<sup>th</sup>, 2005 in Boston at Foley Hoag.

**RGGI Stakeholder Meeting #5  
November 12, 2004**

**Attendance List**

<b>Affiliation</b>	<b>Name</b>	<b>4/2/04</b>	<b>5/20/04</b>	<b>6/24/04</b>	<b>9/13/04</b>	<b>11/12/04</b>
	<b>Staff Working Group</b>					
CT DEP	Chris James	X		X		X
CT DEP	Chris Nelson		X		X	
DE DNREC	Philip Cherry	X		X	X	X
DE PSC	Bruce Burcat					X
DE PSC	Robert Howatt					X
ECP	Bill Breckenridge					X
MA DEP	Bill Lamkin	X			X	
MA DEP	Nancy Seidman			X		X
MA DOER	Dwayne Breger	X	X	X	X	X
MA OCD	Sonia Hamel	X	X	X	X	X
MD-DOE	Gene Higa	X	X	X	X	X
MD-Energy Administration	Michael Li					
ME DEP	Kevin Macdonald	X		X		
ME DEP	James Brooks					
ME PUC	Dennis Bergeron					
NB	Darwin Curtis					
NH DES	Joanne Morin	X	X		X	
NH DES	Bob Scott	X				
NH DES	Andy Bodnarik					
NH DES	Joe Fontaine			X	X	
NH PUC	Maureen Sirois					
NJ BPU	Michael Winka	X				
NJ DEP	Christopher Sherry	X	X	X	X	X
NJ DEP	Joe Carpenter	X				
NJ DEP	Jeanne Herb					
NJ DEP	Sam Wolfe	X				
NY DEC	Franz Litz	X	X	X	X	X
NY DEC	Michael Sheehan	X	X		X	X
NY DEC	Thomas McGuire	X	X	X	X	
NY DEC	Lois New	X	X	X	X	X
NY DEC	Mark Lowery	X	X		X	X
NY DEC	Jason Denham			X		
NY PSC	John D'Aloia	X	X	X	X	X
NY PSC	Tina Palmero					X
NYSERDA	Karl Michael	X	X	X	X	X
PA DEP	Joe Sherrick	X	X	X		
PA DEP	Don Brown					X
RI DEM	Steve Majkut		X			
VT DEC	Dick Valentinetti	X			X	
VT PSB	David Farnsworth				X	

Affiliation	Name	4/2/04	5/20/04	6/24/04	9/13/04	11/12/04
<b>Stakeholder Group</b>						
ACEEE	Bill Prindle	X	X	X	X	X
AES	Mark Buzel	X	X	X	X	X
AES	Chris Wentlent	X				
CLF	Seth Kaplan	X	X		X	X
Constellation	John Quinn	X	X	X	X	X
Dominion	Dan Weekley	X	X	X	X	X
Dominion	Lenny Dupuis	X	X	X	X	
EDF	Jessica Holliday	X	X		X	X
Entergy	Brent Dorsey	X	X		X	X
Entergy	Jeff Williams			X		
Environment Northeast	Dan Sossland					
Environment Northeast	Derek Murrow	X	X	X	X	X
Environment Northeast	Heather Kaplan					X
IEP of NJ	Steve Gabel			X	X	
IEP of NJ	Mally Becker		X			
International Paper	Doug Stilwell					
International Paper	Karen B Risse (Alternate)	X	X	X	X	X
Keyspan	Bob Teetz	X	X	X	X	X
Keyspan	Cathy Waxman (Alternate)	X	X	X	X	X
Maine Public Advocate	Steve Ward	X	X	X	X	
NEGT	Tom Powers	X	X			
NEGT	Susan Flash			X		
NEGT	Paula Hamil				X	X
NGRID	Joe Kwasnik	X	X	X	X	X
Northeast GHG Coalition	Michael J Bradley	X	X		X	X
Northeast GHG Coalition	Brian Jones (Alternate)	X	X	X	X	X
NRDC	Dale Bryk	X	X	X	X	X
NRDC	Luis Martinez	X	X			X
Northeast Utilities	Jon Russell	X	X	X	X	X
NY Coalition	John G.Holsapple	X	X	X	X	X
NY Coalition	Sandra Meier (Alternate)	X	X	X		
PA Consumer Advocate	Sonny Popowsky	X		X	X	
Office of PA Consumer Advocate	Griffiths, Dan (Alternate)		X			X
Pace Law Center	Larry De Witt	X	X	X	X	X
PIRG	Rob Sargent	X	X	X	X	
PSEG	Ron Drewnowski	X	X	X	X	
PSEG	Christine Neely (Alternate)		X		X	X
PSEG	James Hough			X		
The New England Council	Deirdre Savage	X	X	X	X	X
UCS	Deb Donovan	X	X		X	
UCS	Michelle Manion (Alternate)	X	X	X	X	X
United Technologies Corporation	Christopher Powell	X	X		X	X

<b>Affiliation</b>	<b>Name</b>	<b>4/2/04</b>	<b>5/20/04</b>	<b>6/24/04</b>	<b>9/13/04</b>	<b>11/12/04</b>
<b>Resource Panel</b>						
ISO-NE	Mark Babula	X				
ISO-NE	Jim Platts	X		X	X	X
NatSource	Richard Rosenzweig	X				
NatSource	Neil Cohn	X				
NatSource	Ben Feldman			X	X	
NatSource	Michael Intrator					X
NESCAUM	Ken Colburn				X	
NESCAUM	Suzanne Watson	X	X	X	X	X
NYISO	Dave Lawrence	X			X	
NYISO	Mollie Lampi					
NYISO	Aaron Breidenbaugh		X		X	X
Pew Center	Sally Ericsson	X	X			
Pew Center	Judi Greenwald	X	X	X	X	X
PJM	Susan Covino					X
PJM	Kenneth A. Schuyler, PE		X			
PJM	Joe Kerecman	X	X			
RAP	Richard Cowart	X	X	X	X	X
RFF	Joe Kruger	X	X	X	X	X
WRI	Jonathan Pershing	X	X	X		X
WRI	Andrew Aulissi	X		X		
<b>Facilitators</b>						
Raab Associates, Ltd.	Jonathan Raab	X	X	X	X	X
Raab Associates, Ltd.	Peter Wortsman	X	X	X	X	X

**Observers at November 12<sup>th</sup> Meeting**

<b>Affiliation</b>	<b>Name</b>	<b>11/12/04</b>
ABA Renewable Energy Resources Committee	Edna Sussman	X
AgCert International LLC	Susan Wood	X
AIM	Bob Rio	X
American Petroleum Institute	Steven Crookshank	X
Calpine	Don Neal	X
Cantor Fitzgerald	Laurie Gage	X
CEEP	Gelvin Stevensen	X
Chicago Climate Exchange	Robert Rabinowitz	X
Conservation Services Group	Patricia D. Stanton	X
COOP	Ira Ropoarton	X
EDR Group	Lisa Petraglia	X
EDR Group	Teresa Lynch	X
EEl	Eric Holdsworth	X
Energy Argus	Valerie Volcovici	X
Energy Foundation	Marcus Schneider	X
Environmental Advocates of New York	Christine Vanderlan	X
EVentures	Mike Walker	X
First Environment, Inc.	Jay Wintergreen	X
FPL	Lynn Smallridge	X
FPL	Ray Butts	X
Gifford Park Associates	John Cusack	X
Heck Associates	Werner Heck	X
ICF Consulting	Steve Fine	X
ICF Consulting	Chris MacCracken	X
International Climate Change Partnership	Michael McAdams	X
International Energy Agency	Julia Reinaud	X
IPPNY	Radmila Miletich	X
M.J. Bradley & Associates, Inc.	Christopher Van Atten	X
MARAMA	Megan Schuster	X
NEG-ECP	John Shea	X
NEI	Mary Quillian	X
NJ PIRG	Emily Rusch	X
NRG	Cynthia Karlic	X
NRG Energy, Inc.	Rodney Bownds	X
NY DEC	Jeffrey A. Mapes	X
NY PIRG	Jason Krabbis	X
NYPIRG	Jason K. Babbie	X
Penn Future	Tom Tuffey	X
Pew Charitable Trusts	Lea Aeschliman	X
PSEG	Dan Cunningham	X
PSEG	Peter Yost	X
Read and Laniado, LLP	Richard King	X
Stone and Webster Management Consultants Inc.	Frank Austin	X
Synapse Energy Economics	Lucy Johnson	X
Technology & Market Solutions, LLC	David W. South	X
The Climate Trust	Mike Burnett	X
The Nature Conservancy	Sarah Woodhouse Murdock	X
UWUA and IBEW Local Unions	Richard J. Koda	X

