

**Regional Greenhouse Gas Initiative  
Stakeholder Group Meeting Process  
June 24<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 #3: Meeting Summary**

92 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. Temporal Flexibility Mechanisms, *Nancy Seidman, MA DEP*
- c. May 20<sup>th</sup> Stakeholder Group Meeting Summary

At the Meeting:

- d. Initial RGGI Allocation Options, *David Harrison, Jr., NERA (presented by D. Burtraw)*
- e. Initial RGGI Allocation Options, *Dallas Burtraw*
- f. Status of Regional Greenhouse Gas Registry (*NESCAUM handout*)
- g. Presentation on REMI Economic Modeling Plans, *Dwayne Breger, MA DOER*

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. All those present introduced themselves, and then Dr. Raab reviewed the agenda for the day.

**III. Follow Up from Prior Meeting**

Jonathan Raab mentioned that 15 people have signed up to join the modeling subgroup as a stakeholder sounding board. He also reminded the group that there is an offset workshop tomorrow. In addition, he noted that the Staff Working Group concluded that the threaded discussion did not garner much enthusiasm from stakeholders and will not be implemented.

One stakeholder asked if the modeling subgroup is still open to join, and Jonathan Raab said the first meeting is July 1<sup>st</sup>, at 3pm, and if others want to sign up to contact Karl Michael at [ksm@nyserda.org](mailto:ksm@nyserda.org).

## IV. Allocation Issues

Dallas Burtraw from RFF reviewed some of the slides prepared by David Harrison from NERA who couldn't make the meeting. Click on the following link:

[http://www.rggi.org/docs/harrison\\_presentation\\_6\\_24\\_04.ppt](http://www.rggi.org/docs/harrison_presentation_6_24_04.ppt)

to view the presentation (a more enhanced version is available on the website including more material than what was presented).

The following questions were asked by one or more Stakeholders, Resources, or members of the Staff Working Group. *Questions are italicized*, and responses are from Dallas Burtraw, unless otherwise noted.

*I have a question about whether having a cap and allocating a certain way can drive electricity prices down. Can you talk through this more? In practice, will people do it? When will it happen? Are there real world obstacles to doing this?*

This is the seeming inefficiency with updating allocation. There is a potential to decrease prices, at least relative to the price level under other forms of allocation. Prices still may be higher than in the absence of the pollution policy. For the second part of the question, will prices be bid lower, and gas generation be expanded, etc. There are forces in the market with updating allocation to drive down costs at the firm level but there are institutions that mitigate these situations. There has been a study in the context of NO<sub>x</sub> pacts in Sweden, where they found the effect of lowering of product prices and expanded generation but this was minor compared to the finding that the cost of achieving emission reductions was a lot less than anticipated. Distortions were present but secondary.

*There is no history in allocating to indirect emission sources. There has been some work done on NO<sub>x</sub> here. I also wanted to be clear on energy efficiency issues.*

Wait until I cover EE in my presentation. A Resource Panelist added that the cap has a cost, but updating method can lower or increase this cost.

*Will the generators with the lowest fuel costs get greater allocations under the updating output-based approach?*

All plants see a reduction in variable costs with updating. The "rebate" embodied in the emission allowance may not be worth the cost of expanding generation for all generators. So one would expect to see an expansion of generation with low emitting fuels.

*Couldn't there be some negative side effects to increase cheap, high emissions, fuels with output-based updating allocations?*

Generators are incurring a cost to emit CO<sub>2</sub>, but also receiving a rebate to increase generation. For high emitting sources the cost of compliance – surrendering emission allowances – would be greater than the value of the extra emission allowances earned with expanded generation. So high emitting sources would not respond to the incentive to expand generation under updating.

Dallas Burtraw then presented his own presentation on allocation issues. To view the presentation, click on the following link:

[http://www.rggi.org/docs/burtraw\\_presentation\\_6\\_24\\_04.ppt](http://www.rggi.org/docs/burtraw_presentation_6_24_04.ppt)

*What are your assumptions for the marginal cost schedule of CO<sub>2</sub>? Why is the cost schedule so different than SO<sub>2</sub>?*

In the real world the cost schedule for reducing CO<sub>2</sub> emission probably would be slightly convex (upward sloping); this is just a stylized linear marginal cost schedule in the graph. The stylized cost schedule for SO<sub>2</sub> in the first graph is also assumed to be linear when it may be convex in the real world. The main point being illustrated is that in SO<sub>2</sub>, reductions are going from 0-50%, while in CO<sub>2</sub>, reductions going from 0-10% (Assumed).

*Output based updating allocation is also an issue of competitive and non-competitive markets. All generators have a mix of how they sell power, contracts, spot market, etc. Tell me more about analyses that lead to the hypothesis that updating allocation can mitigate leakage through lowering electricity prices.*

Updating provides an incentive to expand generation, and this offsets the incentive to seek electricity generation outside the region that does not bear the cost of reducing carbon emissions. There are institutions (i.e., long term contracts) that mitigate all this in the short run. The points I make are more compelling over the long term than the short term. Some long-term coal contracts are renegotiated as the price of coal changes over time. Over the long term there is a strong force affecting economic behavior as contracts are renegotiated, etc., but a weaker force over the short term.

*Updating may reduce leakage problems. Why?*

Whatever the incentives to generate, generators can earn a rebate on some portion of any increase in generation. That rebate offsets the price increase due to cap and trade program, and the incentive to expand generation operates in the opposite direction of the incentive to move electricity generation to outside the region.

*There is a tremendous opportunity to create a clean energy future. The challenge is getting incentives right.*

Right, the challenge is getting incentives right to get efficiencies on supply and demand.

*In choosing a certain allocation formula, what's the impact on fuel diversity of the region?*

There is an effect on fuel diversity that stems from allocation method. With updating, there is a little bit of a transition to new technologies. There is a slightly accelerated movement along the learning curve for new technologies due to incentives to increase generation. A key point, however, is that renewables and nuclear (non-emitting generation) stand to gain in any of these allocation schemes because the program raises the costs of their rivals and raises their revenues by raising electricity price. They do not have to receive a share of the allocation of emission allowances to benefit from the program.

*By illustrating that benefits are 20x total costs, you portray a huge opportunity to raise prices, and compensate consumers. I'm skeptical of that analysis.*

There are good reasons why the point illustrated in the graph won't hold fully. Among the most important, it's difficult for generators to pass thru real-time prices to consumers. So, one may find a change in electricity price that's smaller than the cost imposed on firms in a given time of day, because the cost may be incurred by coal plants but natural gas plants are setting electricity price at the margin. But, in other time blocks coal may be at the margin and inframarginal resources such as renewables or nuclear enjoy increased revenues from increased electricity price, when they do not incur costs. The change in revenues over the year is the sum of the change in revenues over each hour of the year. In our simulation model, the general conclusion still survives. When we examine the portfolio of assets held at the company level, we find that 21% allocation is enough to compensate generators on a national basis.

*Would you agree that output-based allocations are essential if you want to encourage efficiency on the generation side? Based on the presumption I heard that generators will make choices based on the cap, and consumers will then make choices based on price. In my experience, energy use is inelastic when it comes to price, as electricity is a small fraction of total costs., Elasticity continues to shrink. Generators have clear signals to come up with a cost effective package, but I don't see demand side driving more efficiency. Do we need a direct access in allocation process?*

The first question is output vs. input. Should allocation be on basis of output (electricity generation) emissions, heat input, or something else? Output/generation is most efficient way to get generators to produce the most megawatt hours with the least emissions because it rewards more efficiency at the plant level. For the second question, economists are trained to believe that people react and demand shifts in response to price changes. There are statistical measures of this. It may be that changes are not significant in personal behavior, but are important at the time of capital turnover. Say, for example, expectations about future prices can guide household decisions about whether to purchase an energy efficient refrigerator.

*The state of Ohio permits generators to recover costs of CO<sub>2</sub> and other air pollution control devices. Should we consider this issue as part of allocation method, level of cap, or modeling?*

Securing financial well being in cost recovery opens up a can of worms on how should emission allowances be allocated. Firms should study this approach and the region may want to move toward this kind of design. But it interacts with the compensation implicit in allowance allocation. This is one big package.

*Technological turnover can lower cost of compliance over time. Isn't the goal to design program to yield greatest increase in end use efficiency?*

I agree that is a goal. One approach is to change electricity prices in order to change downstream behavior. A second approach updates allocation and reduces the overall cost of cap. There is not much cost in demand reduction, as it enhances the program, but it's difficult to achieve in the real world because it is hard to design the institution to reward energy conservation that does so in an efficient way without rewarding "anyway" activities. When we have allocated to conservation within the model it contributes importantly to helping achieve overall goal of emission reductions. But how to build this institution in the real world is a challenge.

*Where are excess costs showing up in updating?*

Updating has lots of aspects in terms of asset values or social costs of program. With updating, consumers get a weaker price signal, more megawatt hours are generated so generators have to do more to reduce emissions for each megawatt hour generated. Meanwhile consumers do not see a signal to purchase energy efficient refrigerators because prices are lower. As prices go down, profits of generators also go down. In fact, we find some firms better off in an auction than in an updating scheme.

*Are there other studies of allocation and price impacts?*

Dallas responded by saying that Larry Goulder at Stanford University has studied the compensation issue using a general equilibrium model and comes to similar conclusions to those he presented. One other researcher, Anne Smith at Charles River Associates did another nice study but asked somewhat different questions.

### **Allocation Questions:**

Dr. Raab then asked the stakeholders to provide input on some of the allocation questions from the key policy issues document. Responses from one or more Stakeholders and Resources are below each issue.

#### **(1) How will each state's cap be allocated?**

- An equitable way to allocate is based on fixed rate reduction in state since 1990. Look at 1990-92 range, instead of just a single year.
- The RGGI states should come to an understanding of what regional cap level will be first, as this will affect modeling, etc. What portion states get should come second.
- Let states allocate as they want, like it worked with NOx Budget/NOx SIP Call.
- Agree with setting region wide cap first.
- There's a disconnect between what's economically rational and what makes sense. The more we can look at a baseline that is as current as possible makes sense from the public's point of view. Easier for public to grasp notion of a cost effective cap. Also, there should not be a sense of entitlement toward incumbents.
- There is concern over economics, especially from the business community, as ratepayers have seen electricity prices increase over recent years. One reason is due to programs, which have reduced CO<sub>2</sub>. In New York, generation has increased by 3% since 1990, but CO<sub>2</sub> has been reduced by 27% since then. It's important to consider what has already been paid and at what price when picking a baseline year.

- It's important to get into an allocation scheme and include resources for energy efficiency. The price impact is a major barrier to getting to RGGI goals. Energy efficiency is a major mitigation strategy of reducing price impacts and leakage.

**(2) Will a uniform regional allocation method be chosen or will states choose different allocation methods?**

- Each state has unique fuel mix, fleet of plants, natural resources, distance from fuel sources, public policy considerations, etc. One size does not fit all. Approach used in OTC and SIP call provides insight, as each state was given latitude in how allowances are allocated to sources. With more flexibility in achieving emissions, there will be a higher likelihood other states will adopt.
- Allocation methodology needs to address what portion goes to generators, and what portion goes to public benefit. We support output-based allocation to regulated generators. For public benefit, leave up to states, which have legal authority to create auctions. There should be some consistency with the split between generator and public benefit. Start at 80% allocation to generators and 20% to public benefit in auction to start, with more going to public benefit over time.
- Uniform allocation.
- We don't want people to race to the bottom in opposition to social efficiency. States should have a consistent allocation between generators and public benefit.
- Intrigued that different countries have different reduction requirements in Kyoto –perhaps use that among states. We believe that allocation methods to generators should be consistent among states, with some limited flexibility.
- Jonathan Pershing added that the EU began with Kyoto which was very complicated, then did 8% as a whole, and then looked at :
  - Per capita emissions in each country
  - Reduction measures which have been taken
  - Other factors

The UK and Germany were ahead of everyone else, and willing to contribute to a pool. Also had EU commission to oversee and force an outcome. In the process, countries came to some agreement without oversight body, which may be a good model. WRI is doing analysis on this allocation method and hope to put it on the RGGI website to solicit feedback.

**(3) Will auctions, output-based, input-based, fuel-neutral, fuel specific, or another allocation method be chosen? Should allocations be made to load or generation?**

- How will allocations occur? Over reliance on one fuel type jeopardizes electricity system reliability. Fuel neutral allocations incentivize gas-fired generation.

Reliability problems that can result from overreliance on gas were vividly illustrated during the January 2004 cold snap when the reliability of the New England electric system was put at risk. Therefore a fuel specific allocation approach is needed. Allocation should be made to generation and not load. Allocation to load does not maintain the direct relationship between emission rate and cost of generation through the uses of allowances, and can exacerbate the leakage problem.

- CRS has put together a paper to be posted on the RGGI website and they want to be included in process. They argue that renewables need an allowance allocation to make green marketing claims. We don't want to inadvertently kill that market through allocation methods.
- Should work toward setting up incentives. Perhaps output based allocation with allocation to high carbon emitters adversely affected early on would be helpful in addressing objectives.
- Output based allocation (unsure if updated or not). Use recent years to develop baseline, with reference to the 1990 figure, but current years should be taken into account. We encourage everyone to look at NO<sub>x</sub> budget program and how flexibility has impacted states.
- There's a link between the size of the cap, and the modeling process. Modeling will influence size of cap. If we limit modeling to neoclassical economic modeling, I fear that it will show huge price increases are needed to get desired emission reduction. So necessary cap targets may look politically and economically impossible, imposing unfair costs to generators and the regional economy. Need to consider energy efficiency potential. The Northwest Power Planning Council has been working on this longer than anyone else. The energy efficiency resource has grown over last 20 years, and we're missing a way to ensure the energy efficiency resource is fully captured in modeling, size of cap, and allocation.
- Whether allocation should go to load serving entities or generators? Allocating to load serving entities will result in external leakage, is hard to track, and is not a good solution.
- There are implicit assumptions in the rectangle and triangle (under marginal cost curve in Dallas Burtraw's presentation). Think how benefits flow; think carefully how government distributes benefits of auctions. The effect of an auction is increasing energy prices significantly. Stringency of cap is likely lowered going forward due to this.
- Dallas' presentation showed electricity prices would not be affected by allocation methods when choosing between an auction and historic (grandfathering). (They would be affected by updating allocation.) How do we make sure blue rectangle gets to public benefits? If we can't do auctions, we need to figure out way to proactively distribute allowances to public benefit recipients. Maybe allocate to customers, or allocate to SBC and energy efficiency programs, while compliance requirement would remain with generators. We need to figure out how to provide

generators with allowances to stay whole without providing windfalls to generators.

**4. Will allocations be made only to sources covered by the cap or will they be made to non-emitting generators?**

- If allocate only to fossil sources, potential savings smaller. Allocating to non-emitting sources allows for greater trading opportunities.
- Allowances must be only given to emitting plants (not nuke or hydro) as no further incentive needed for non-emitting plants. They are incentivized thru RPS. They will just get windfall profits while fossil plants face large compliance costs. Allocating allowances to non-emitting generators is in direct conflict with the overarching goal of maintaining electric system reliability.
- Fossil units are the consumers of allowances. Getting allowances to consumers at the cheapest cost is the best option. E.g., RPS in New York, existing hydro units did not get benefits, as they are already competitive, don't need a windfall. But incremental non-emitting sources should be given allowances in addition to fossil sources to help us get to where we want to go.
- Allow for allocations to non-emitting generators, but only for incremental, new generation.

The Stakeholders then moved on to addressing questions six through eight (question 5 was covered later in the meeting with temporal flexibility):

**6. How will new sources be handled?**

**7. How will retired sources be handled?**

**8. How will re-powering of units be handled?**

*In response to the above three issues, one or more Stakeholders made the following comments and questions:*

- All plants operating in baseline year should get allowances.
- Retirement of emitting plants should not be disincentivized by not getting allowances
- If allocations are output based and updated proportionate to changes in generation, all these problems go away. If not, each issue needs to be addressed.
- Can look at rolling average of last 3 years or so to get around some problems with peaking plants.
- New sources would still need an upfront allocation since no operating history.
- Look at Oregon and Washington State offset policies
- It's a counter productive policy not to give allocation to new sources, which are generally, more efficient and cleaner, as it adds an incremental cost to those units as they get built and operate.

**Observers then made the following comments on allocation:**

- The Northwest offset policy for new power plants only is appropriate in the Northwest given large hydro baseload generation resources but not appropriate in RGGI region. Biggest problem in the Northwest is new power plants –combined cycle gas, but they need to be capped, as region’s biggest new source.
- If allocations are done on more recent years, this essentially penalizes consumers/states which have made big efforts since then.
- Some concern with resource diversity. May get immediate shift in fuel mix and exacerbate reliability issues. Need to make sure no shift to natural gas in a very short timeframe.
- If trying to decrease CO<sub>2</sub> over time, want to incentivize new technologies, and keep current assets whole and running. Financial additionality should not be part of incentivizing new technology
- If states have to all follow same allocation system, political reality suggests that groups within each state will determine how their state is disadvantaged, and states will leave program.

### **Status of Regional Greenhouse Gas Registry (RGGR)**

In the afternoon, a short memo prepared by NESCAUM was passed out giving an update on the regional greenhouse gas registry (RGGR) process. To view the update, click on the following link: [http://www.rggi.org/docs/rggr\\_update\\_6\\_24\\_04.pdf](http://www.rggi.org/docs/rggr_update_6_24_04.pdf)

### **V. Temporal Flexibility Mechanisms**

Nancy Seidman from MA DEP gave a presentation on temporal flexibility mechanisms on behalf of the Staff Working Group. To view the presentation, click on the following link: [http://www.rggi.org/docs/temporal\\_flexibility\\_6\\_24\\_04.pdf](http://www.rggi.org/docs/temporal_flexibility_6_24_04.pdf)

Comments and questions from one or more Stakeholders, Resources, and observers are below in *italics*, and responses from Nancy Seidman or other SWG members are in regular typeface:

*What did you do with shift to gas generation? Will someone get credit for something they would do anyway for economic reasons?*

Gas would start at a different baseline, but also have to look at the years.

*Entergy established voluntary stabilization program over a 5-year period (2001-2005). True up at 50 MM tons per year.*

Nancy Seidman stated that the SWG saw many positives and little downside for including banking, but that other flexibility mechanisms seemed to have more challenges that would need to be addressed. The facilitator then asked the Stakeholders for feedback on each of the temporal flexibility mechanisms under consideration by RGGI SWG including, 1) banking; 2) borrowing; 3) true up period; and 4) credit for early reductions.

## **Banking:**

Comments from one or more Stakeholders, Resources, and observers on banking:

- *This question depends on size of cap and integrity of program.*
- *Flexibility is an important component regardless of size of cap. Maximum flexibility makes program more attractive to other potential states outside region.*
- *Ability to bank did a lot to hold price of SO<sub>2</sub> down. What happens to value of allowances in bank if cap is ratcheted down over time?*

Observer:

- *Allowing banking provides incentives to individual companies to reduce emissions faster.*

## **Borrowing:**

Comments from one or more Stakeholders, Resources, and observers on Borrowing:

- *Nervous about defaults. There is no overarching model for dealing with defaults due to bankruptcy.*
- *If you allocate to companies who won't be there in 5 years, it's a bad idea.*
- *Concern about borrowing depending on how it functions. Should create a dis-incentive to borrowing, with heavy discounting (e.g. 50%), and ensure payback happens within a year.*
- *A cap program forces environmental integrity, even if companies go out of business. No environmental reason to disincentivize borrowing through discounting or another method. Not dealing with any short-term nonattainment as with the NOx program.*
- *Some efficiency programs can provide more benefits over time, and want to provide those incentives. However, there is a need to make sure insurance pool is covered there.*
- *Don't have annual allocation but make it multi-year. Perhaps have 5-year allocations instead of 1-year allocations.*
  - *Nancy Seidman of MA DEP replied that price may go up in last year if all allocations spent in years 1-4*
- *Consider a longer compliance period with borrowing (Kyoto-5 years, EU-3 year).*
  - *Each country in program can specify how much they want to allocate in 3-year period. They can divide budget over 3 year period, not necessarily evenly. Second phase (beginning 2008), a 5 year period.*
  - *There is still the issue of borrowing within and between periods, and a concern about continual borrowing from period to period. The upside is liquidity, and the downside is potential default.*

- *In a Vermont energy efficiency program, borrowing is allowed but all members are in a pool with peers, so they insure against each other defaulting and essentially supervise each other. Peer enforcement helps keep each other under control.*
- *Is there anything that can be done to deal with problem in last year?*
  - *A Resource Panelist replied that in California, the state provided another recourse to defaulting.*
- *Borrowing could help if program expanded beyond electricity sector.*
- *Can deal with default issue within framework of the program. It is important in providing flexibility and making program more politically feasible for each state.*

### **True Up Period**

Franz Litz of NY DEC asked Stakeholders to share their thoughts (either in the meeting or afterwards) on how different flexibility mechanisms would be used. True up is a potential alternative to borrowing. What are the limits to using a true up period? If we extend true up period, does it give the same benefit as borrowing? As between two mechanisms providing the same benefits, the Staff Working Group would choose the less cumbersome option.

Comments from one or more Stakeholders, Resources, and observers on using a True Up period:

- *Consider annual reporting, but not annual compliance*
- *Some entities may fall behind and create political pressure to relax the true up constraints in final year. Would help to put a constraint on how far off 5-year trajectory any generator can get.*
- *Delay between compliance and verification, then evaluate whether or not in compliance. In Kyoto, this was rejected as no one country could pass judgment on another country's ability to meet reductions in the following year(s). In EU, 1 year true up, with a 1 year lag time, over a 5-year period.*
- *It's hard to weigh in without seeing the whole package. Borrowing can send the wrong political signal that reductions don't need to be made quickly.*
- *The signal period is critical. If long term signal is robust, not that problematic. One option is to require the 2<sup>nd</sup> period be negotiated before the 1<sup>st</sup> period is up.*
- *RGGI should get the basics in place, and think about longer term borrowing policy later, as there is limited experience with borrowing.*

### **Credit for Early Reduction:**

Comments from one or more Stakeholders, Resources, and observers on giving credit for early reduction of CO<sub>2</sub>:

- *Broaden this to other areas such as sequestration activities from both a historic and going forward standpoint.*
- *If these are offsets, they should meet offset requirements agreed to by this program.*
- *Entergy made a GHG reduction target –but arguable whether we made it for economic or GHG reasons. Can hedge risk by shifting fuels.*
- *Does a reduction have to be pinned to a facility? Would the addition of a non-emitting resource receive an early reduction credit?*

Nancy Seidman then asked, “Do states need to be consistent in their temporal flexibility rules?”

- If we want consistent trading among states, RGGI should strive for consistency in the market place to avoid gaming (different than allocation where handing out money).
- Credit for early action is different from other temporal flexibility mechanisms. States can be inconsistent with how they give credit for early reduction, but if states are inconsistent with banking, borrowing, or the true up period, this will create problems in the market, and will make it more difficult to trade. There may be justification for inconsistency across states with crediting early reductions, which may be viewed as an allocation issue.
- States should have consistency, and early reduction may be viewed as an allocation issue.
- How states allocate their budget is a competitiveness issue, but not a market liquidity issue.

#### Observers on Temporal flexibility

- We are talking about modeling issues. A longer true up period may make technology capital expenditure more feasible. Whether borrowing or true up, may help ease spikes caused by hot weather, high natural gas prices, etc., Model various possibilities to help average out variability over time.
- Early reductions are like banking in first year. May want to figure out pool of credits before setting cap.

## **VI. Modeling**

### **Update on IPM Input and Review Process**

Karl Michael of NYSERDA provided an update on the progress of the IPM energy model. NYSERDA has signed a contract with ICF. Karl said it is challenging working with fixed budget and specifying concrete deliverables while also attempting to keep modeling options open.

Karl said the Stakeholder Modeling Subgroup has set up its’ first conference call July 1 at 3:00pm. The Subgroup will provide a sounding board for reaction and discussion of modeling

options with the Staff Working Group, but the Subgroup will not act as a decision making group. Karl Michael said the Modeling Subgroup of the Staff Working Group will try to present latest leanings / tentative decisions on calls, and get feedback and ideas to consider from the group. The Staff Working Group will bring big leanings/ decisions back to Stakeholder Group as appropriate.

Karl added that the budget will support about 15-20 model runs. The model runs provide output for the region and by each individual state.

One or more Stakeholder had the following questions (*in italics*), to which Karl Michael answered below each in regular typeface:

*Will you also get other NERC regions?*

Yes.

*Do you measure energy efficiency reductions as an input as opposed to a result?*

There is an option to model it both ways, depending on what we decide. We expect to explore that.

*How many conference calls will there be, when will they be, and will an agenda be sent before each call?*

Unclear at the moment, but we will schedule conference calls as we move forward.

### **RGGI Cost Benefit Analysis Subgroup (including REMI model)**

Dwayne Breger of MA DOER presented an overview of the cost benefit analysis on behalf of the cost benefit analysis subgroup. Click on the following link to view his presentation:

[http://www.rggi.org/docs/remi\\_slides\\_6\\_24\\_04.ppt](http://www.rggi.org/docs/remi_slides_6_24_04.ppt)

Questions and comments from one or more Stakeholders, Resource Panelists, and Observers are below in italics, with responses below as appropriate:

- *Will health impacts be considered in the reference case and under cap and trade?*
  - Dwayne replied that the reference case will be the baseline, and health impacts will be additional based on cap and trade program.
  
- *Demand curves of IPM and REMI should be the same. Seems like a demand curve is fed into IPM, but if there is a demand response within IPM, I want to ensure the demand curve in REMI is the same. Production cost for electricity sector is a key output of the model. IPM doesn't do a good job of that, but perhaps REMI will help. IPM can also give production costs by type. Fuel consumption should be consistent. Also, if there are public benefit allocations with efficiency programs, make sure to understand where money went and who benefited.*
  
- *Can some money flow back to consumers to lower retail prices?*

- Dwayne said yes, and added that REMI could model how we re-circulate money from an auction.
- *Can REMI Model build energy efficiency resources in same way it builds generation? Fine tune numbers to ensure they are up to date.*
- *Need to focus on cost vs. price issue, and we want to understand wiggle room there. Figure out a way to build energy efficiency in as a resource. We know we can meet growing demand with energy efficiency and renewables. Compare that cost to outcomes of what a cap gets us under various scenarios, to capture energy efficiency potential.*
- *Is personal income disaggregated, so we can look at distributional effects across income groups?*
  - Karl said that income is categorized by economic sector, but not by personal income levels. It won't show how people at different income strata will be impacted. Also, none of the models will tell you how much it costs to develop energy efficiency.
  - Dwayne added that REMI won't model how much energy efficiency will be adopted. Energy efficiency adopted is an input into the REMI model (comes from IPM model). REMI not built as energy oriented model, so it has limitations. The expectation is to work outside of the model and evaluate impacts on energy efficiency and the renewable sector in the RGGI region.
- *The title of the subgroup should be changed to "Economic Impact Modeling". Cost benefit analysis is much more broad.*
  - Dwayne replied that the scope of the REMI work will be economic impact analysis
- *Save money to do some extra modeling runs at the end. Are there any websites/background on REMI, basic growth assumptions, multiplier assumptions, etc., that the Stakeholders can refer to?*
  - Dwayne said some information is available on [www.remi.com](http://www.remi.com), maybe more in some academic papers
  - Karl added that answers could be found to specific Stakeholder questions on model assumptions.
- *Is average pricing or marginal pricing being used in the model? SO<sub>2</sub> emissions may change based on a CO<sub>2</sub> cap and lead to double counting.*
  - Karl said he will check if there are co-benefits as a result of a CO<sub>2</sub> cap.
- *Encourage development of a national approach and provide early adopter benefits. Some economic costs could be temporary as rest of country catches up with us.*
- *When optimizing over 4 pollutants, cost may change even if emissions stay the same*

Observer Comments:

- *Model disincentives from increased air pollution coming in from outside of region. Model worst case scenario of increased importation of electricity from outside region.*

- A Resource Panelist replied that leakage in other areas is marginal, and it's difficult to get confidence in this modeling
- Dwayne Breger added that the modeling is being used to help inform the Staff Working Group in making recommendations.
- *An income distribution analysis should be conducted to understand how allocation affects different groups. REMI model doesn't model the varying distributional economic impacts of allocating to generators or consumers, and should be done in addition to REMI to capture affects of various allocation approaches.*
- *Model offsets from other sectors.*

Jonathan Raab said the next RGGI Stakeholder meeting is scheduled for Sept 13<sup>th</sup> 2004 in Boston, and then the meeting was adjourned for the day.

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

- Post all documents from this meeting on the RGGI website (*Raab Associates, Ltd., Chris Sherry, NJ DEP*)
- Write and circulate meeting summary (*Raab Associates, Ltd.*)
- Provide information to Stakeholder Modeling Subgroup to join first Stakeholder modeling call on July 1 at 3 pm (*Karl Michael, NYSERDA*).

**RGGI Stakeholder Meeting #3  
June 24, 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>Staff Working Group</b>				
CT DEP	Chris James	X		X
CT DEP	Chris Nelson		X	
DE DNREC	Philip Cherry	X		X
ECP	Bill Breckenridge			
MA DEP	Bill Lamkin	X		
MA DEP	Nancy Seidman			X
MA DOER	Dwayne Breger	X	X	X
MA OCD	Sonia Hamel	X	X	X
MD-DOE	Gene Higa	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	
NH DES	Bob Scott	X		
NH DES	Andy Bodnarik			
NH DES	Joe Fontaine			X
NH PUC	Maureen Sirois			
NJ BPU	Michael Winka	X		
NJ DEP	Christopher Sherry	X	X	X
NJ DEP	Joe Carpenter	X		
NJ DEP	Jeanne Herb			
NJ DEP	Sam Wolfe	X		
NY DEC	Franz Litz	X	X	X
NY DEC	Michael Sheehan	X	X	
NY DEC	Thomas McGuire	X	X	X
NY DEC	Lois New	X	X	X
NY DEC	Mark Lowery	X	X	
NY DEC	Jason Denham			X
NY PSC	John D'Aloia	X	X	X
NY PSC	Tina Palmero			
NYSERDA	Karl Michael	X	X	X
PA DEP	Joe Sherrick	X	X	X
RI DEM	Steve Majkut		X	
VT DEC	Dick Valentinetti	X		

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

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

<b>Observers at June 24<sup>th</sup> Meeting</b>		
<b>Affiliation</b>	<b>Name</b>	<b>6/24/04</b>
Boston Carbon Corporation	Charlie Parker	<b>X</b>
Burns & Roe Enterprises	Greg Zoll	<b>X</b>
Carbon Financial Inc.	Michael DeFelice	<b>X</b>
Carbon Trust	Mike Burnett	<b>X</b>
Center for Energy & Economic Development (CEED)	Eugene M. Trisko	<b>X</b>
Clean Water Action	Brooke Suter	<b>X</b>
Columbia University SIPA	Jonathan Rappe	<b>X</b>
Con Edison	Dan Cunningham	<b>X</b>
Ecology and Environment Inc.	Bruce Wattle	<b>X</b>
Edison Electric Institute	Bill Fang	<b>X</b>
El Paso Corporation	Jim Sinclair	<b>X</b>
Environmental Advocates of New York	Christine Vanderlan	<b>X</b>
Environmental Resources Trust	Mario Ben Azzoni	<b>X</b>
EPA	Joe Siegel	<b>X</b>
EPRI	Layla Sandell	<b>X</b>
FPL Energy	Lynn Smallridge	<b>X</b>
Gabel Associates	Holly Minogue	<b>X</b>
Gifford Park	John Cusack	<b>X</b>
Green Fuel Technologies Corp.	Paul Rodzianko	<b>X</b>
Green Fuel Technologies Corp.	Julianne Zimmerman	<b>X</b>
Heck Associates	Werner Heck	<b>X</b>
Independent Power Producers of New York (IPPNY)	Radmila Miletich	<b>X</b>
MA Climate Action Network	Marc Breslow	<b>X</b>
MA Legislature	Jim Marzilli	<b>X</b>
MA Renewable Energy Trust (MTC)	Francis Cummings	<b>X</b>
Member of the Public	Norma Florie	<b>X</b>
Mirant, NY / IPPNY / Couch White	Morgan Parke	<b>X</b>
NEI	Mary Quillian	<b>X</b>
NESCAUM	Kelly Levin	<b>X</b>
NRDC	Kelly Hickman	<b>X</b>
NRG	Cindy Karlic	<b>X</b>
NRG	Rodney Bownds	<b>X</b>
Pace Energy Project	Fred Zalcman	<b>X</b>
Shaw Emcor Waste Management	Bruce Maillet	<b>X</b>
Slater Consulting	Mark Younger	<b>X</b>
The Nature Conservancy	Cathleen Kelly	<b>X</b>
The Nature Conservancy	Sarah Woodhouse Murdock	<b>X</b>
UJAE	Bill Cunningham	<b>X</b>
Yale Environmental Protection Clinic	Jordana Fish	<b>X</b>