

**Regional Greenhouse Gas Initiative
Stakeholder Group Meeting Process
September 21, 2005**

Boston Convention and Exhibition Center
415 Summer Street, Room 109
Boston, Massachusetts
Facilitator: Dr. Jonathan Raab, Raab Associates, Ltd.

RGGI Stakeholder Group Meeting #9: DRAFT Meeting Summary

Over 160 people attended this meeting that began at 9:00am and concluded at about 4:00pm

I. Materials Distributed and Presented

Prior to Meeting:

1. *Agenda*

At the Meeting:

1. *Revised Staff Working Group Package Proposal, RGGI SWG*
2. *SWG Proposal Overview, RGGI SWG*
3. *Groundrule Slide 14, Raab Associates*
4. *RGGI Electricity Sector Modeling Results: Updated Reference, RGGI Package and Sensitivities, Steve Fine and Chris MacCracken, ICF Consulting, Inc*
5. *REMI Modeling Results, Lisa Petraglia, EDRG & Dwayne Breger, MA DOER*

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

http://rggi.org/stakeholder_schedule.htm#summaries

II. Introductions, Updates, and Agenda Review

Facilitator Dr. Jonathan Raab, of Raab Associates, Ltd. welcomed attendees to the meeting and reviewed the agenda for the day. All those present then introduced themselves. Dr. Raab then presented Slide14 from the RGGI Groundrules, regarding public participation in the RGGI process. He reiterated that comments from observers will be welcome after members of the formal Stakeholder Group and Resource Panel have had the opportunity to ask their questions. Dr. Raab thanked the observers in advance for their patience.

III. Latest Staff Working Group Proposal to State Agency Heads

Presentation on Staff Working Group's latest proposal to Agency Heads, followed by clarifying questions -*Franz Litz, NY DEC and Chris Sherry, NJ DEP*

Franz Litz of NY DEC reported that the meeting of the State environmental and energy regulatory Agency Heads that took place July 6 and 7 did not yield an agreement. He reported that the Agency heads have been meeting every three weeks via conference call.

Their next conference call is on Thursday and they will convene for an in-person meeting in Providence next week.

Franz presented the SWG proposal to the Agency heads, which is a revised proposal to the one the SWG presented at the last RGGI Stakeholder Meeting in May.

Franz recapped the RGGI process, which began with New York Governor Pataki's initial invitation to his counterparts for a multi-state process to address greenhouse gas reduction. The announcement met with mostly positive response and since the process began, the SWG has been meeting at least once a month, with conference calls in between. The Agency heads have been meeting every three months.

Franz said that the SWG is hopeful that an agreement on a MOU will come out of next week's meeting, with a model rule to follow. The SWG will circulate a draft model rule regionally when it's done, to get feedback. The post model rule work will focus on rulemaking and/or legislation taking place in individual states, with the goal to promote cooperation.

Franz reported that, as of yet, there is no agreement among the states but that the Staff Working Group has been present for all the discussions among the agency heads and has incorporated feedback from these discussions into this proposal. He said that the start date is 2009, which reflects the lag time needed to go through some legislatures and undertake the rule-making. There will be a two phase cap with stabilization at approximately 150 million tons through 2015, followed by a 10% reduction by 2020 and a built-in review of the program in 2015. This review will be comprehensive and will evaluate all aspects of the program, but the Staff Working Group has identified some aspects that it wants to assure Stakeholders it will be looking into. The Staff Working Group has heard from some Stakeholders that they would like to add various items to this list, which is appropriate, because it will be a comprehensive review. The review would look at the program's progress in meeting emission reductions, the price impacts - were they what was expected, were they more, were they less; it would look at the numerical limits on offsets - do they still make sense in 2015? It would look at how this program has affected imports and what the leakage associated with imports looks like.

One or more Stakeholders, Resource Panel members, and observers asked the following clarifying questions (*questions and comments in italics*, responses by Franz Litz unless otherwise noted):

Derek Murrow. Environment Northeast

In your write-up - it doesn't appear here - but you'd indicated that 150 million tons was approximately current emissions. When we've been looking at the data that doesn't appear to be where current emissions are. Could you quickly describe the discrepancy there. It seems like going from the mid-140's to the 150's, we're a little worried about.

I don't have the write up right in front of me, but I'm sure we didn't call it current emissions. What we said was it is approximately equal to an average of emissions in the three highest years of the last five years emissions and that's the regional number, so it's approximately, if you took every states three highest emissions and added them all together to come up with a regional number. This is something you all have asked for greater explanation on and we're taking a closer look at this number and it's a subject of conversation among the states. 145 tons represents the average 2000-2002 emissions. It wasn't until very recently that we had good data from '03 and '04. So we started with the '00 to '02 emissions, and that made up the bulk of our discussions, and then more recently added the other two. So 145 is roughly that three year average. We then went into discussions among the states of what each state's budget should be. There is not a uniform consensus in how we should look at this among states. Discussions are ongoing.

We've talked about starting the cap at "current levels". The question is, what do you mean by current levels. Does current levels mean the first three years of this decade? Does "current levels" mean the average of the first five years of this decade? Does it mean 2009, and if so, then how do you come up with that number and how do you factor in growth? The way we came up with a number, in practical terms, was it came out of discussions about the budgets - what was each state comfortable accepting as its emissions budget. And that's where we ended up.

Derek Murrow, Environment Northeast

Can I follow up really quickly? Just looking at historical data and the trend, emissions have been flat in the region. I hope you all will consider that the cap will be binding and there will actually be a scarcity of allowances which delivers the price. Our concern is that the cap really deliver change and actually have an allowance price. We hope you'll look carefully at that number.

We have heard that comment and we are looking carefully. A couple of things, it is true that if you look at emissions from the first five years they are either flat or on a slightly downward trajectory. Whatever you believe about the long term gas prices going out into the future there's a debate about how far they'll drop down with the new supplies, there's not as much debate about the next three years, and we all expect the gas prices to be relatively high and that means more oil generation, and more coal generation in the region.

Chris Wentlent - AES

On the high emissions case I believe it assumes there's new coal that can be built in the region and then a higher gas price, like in the seven dollar range, what's the emissions level in that case? I think it's in like the 180 million-ton range, so we're actually looking at some base cases that range from 120 up to 180 million tons total in the region.

I'll take your word on the numbers and we'll see it in a moment in the IPM presentation, but that's certainly one way to look at it, you could look at the high emissions case and say that's where emissions are expected to be when the program launches.

Franz then described state allowance budgets.

He explained that there were differing views on how the Staff Working Group should arrive at budgets, and that this has been a big part of the discussions since folks last met. The factors that people wanted to have considered were emissions, electricity consumption, population, and output. For many of the states, their budgets represent their average 2000-2002 emissions. Again, that's where the Staff Working Group started many months ago and then it added the more recent data. That more recent data raised some concerns for some states because their emissions went up. For example, New Hampshire has a budget that represents its emissions in the later years because it feels that budget more accurately represents where it feels it is. This is in part a political exercise. It's also a data exercise.

Franz then described the Public Benefits Fund and the Strategic Carbon Fund before taking the following questions:

Steve Gabel, IEP of NJ

To clarify, with respect to the 20% number:

- 1. What is the background thinking that went into this on the part of the SWG, relative to the idea that different states are starting from different starting points in the amount of investment they are making in energy efficiency and renewables, yet you've got a 20% amount for every state?*
- 2. Is there any discretion for states to go either above 20% or below 20%?*

The idea was that every state, as part of its rulemaking or proposal to its legislature would have a 20% public benefit, no smaller, and some states have talked about doing more than 20%. We did discuss disparities in past investments, but by and large we all recognize that the region as a whole is very good in [in terms of support for] both energy efficiency and renewables, but there are some differences.

Kevin Conroy, The New England Council

Could states propose the 20% public benefit allocation, but if it fails (e.g., in the Legislature), could they still be part of the RGGI compact?

That's a good question. There is recognition that this is one of the more controversial aspects of the proposal. Even those states that go to rulemaking may decide that it's not a good idea or maybe that they want to approach it differently. Your point is relevant not only to the public benefit allocation, but in general, what if one state proposes the

package and something gets knocked out in legislation. We'd have to revisit that among the states. We can't predict what might happen. We'd have to figure out what we would do from there.

Kevin Conroy, the New England Council

The way I read the SWG proposal was that states could decline to enter into the Public Benefits Fund and still be part of the compact the way it's worded now. And that seemed to be a special provision that didn't exist in the rest of the proposal. Am I misreading that?

Yeah, this acknowledges that some states would require legislation to implement this portion of the proposal. They are agreeing to at least propose it. No state could decline to propose it under the current language in the proposal

Rob Sargent, PIRG

About the Strategic Carbon Fund, apart from the fact that I think it is a sketchy way to deal with leakage. If the other purpose of it is to try to achieve additional reductions, what are the reductions or the projects that would be eligible for the SCF that otherwise would not be eligible for offsets? Was there any discussion of this?

There was no discussion of what specific types we'd want to focus that fund on, that I'm aware of. In general, it's the entire universe of project-based reductions that are not in the short list.

Chris Sherry, NJ DEP added that there would have to be some additionality criteria applied for those project-based reductions and that it would be necessary to insure that the projects being funded were those not likely to occur under standard market practice.

Sonny Popowsky, PA Consumer Advocate

When you say you allocate 20% to public benefit and allocate 5% to the Strategic Carbon Fund, how does it work? Do you put that 25% out for auction and then you take the funds obtained from that auction each year and put it into a fund? Is that how that would work? And the other 75% would be distributed as the state decided?

That's how it could work, but it's not set in stone. For example, a state might want to allocate directly to large consumers in that state as one way to rebate consumers. We seem to be leaning toward selling them all off and then using the fund for public purposes.

Joe Kruger, RFF

Will the State Agency Heads look to try to consolidate that auction process into a region wide auction or might it be on state by state basis?

They might. There are a whole set of issues that might benefit from regional cooperation in this realm and in other realms, but there are some limits to what a particular state might want to agree to now. The initial agreement may allow either to happen, and then the state has the option going forward about whether they want to collaborate on a particular aspect of the program.

Ron Drewnowski, PSEG

Who would be eligible to purchase these allowances under the auction program?

That has to be worked out; we've gotten a lot of comments that if it's done badly, it could have real negative impacts to the market. If we do an auction we will have to think a lot about how it's done and look to you all to help us figure out how it ought to be done.

Chris Sherry, NJ DEP

The overarching goal is to make sure allowances are freely available on the market.

Ron Drewnowski, PSEG

So Chris, does that mean that non-sources could purchase these allowances?

Chris Sherry, NJ DEP

Yes, that's the situation now with the Acid Rain and NOx Budget program, as well.

We need to take your concerns into consideration before that decision is made. Ideally it would be wide open, anyone could buy allowances, but before that decision is made we need to think about any potential market distortions that the design of an auction might create.

Franz Litz then described the proposed approach to leakage, banking, and early reductions credit.

Franz explained that the Strategic Carbon Fund doesn't address the whole problem of leakage and that it is not supposed to. He said that the SCF is supposed to deal with the environmental aspect of it. NJ gets an allocation to help deal with leakage. Many ideas are being floated. A silver bullet hasn't been identified. This will have to be monitored over time to see if leakage happens and to determine its magnitude, to factor that into the measure that will address it. That is why there is a monitoring provision in the proposal. The Staff Working Group received a lot of feedback that this provision should be much stronger.

Seth Kaplan, CLF

When people have proposed ideas on how to deal with leakage, there's never been a forum where there's been a real give and take and investigation of a range of options on how to deal with leakage. Why couldn't this have been discussed more openly?

That's a good idea, but it's not as though this has just been discussed only among the SWG. We plan to do monitoring over time. It's true that we haven't devoted a segment of a meeting to this subject, but that's true of a lot of issues.

Derek Murrow, Environment Northeast

Could you provide more clarification on early reduction credits? In my thinking that's a part of the state's allocation scheme as to how they deal with changes in specific plants, and I just wanted to confirm that that doesn't in some way impact the regional cap number.

These function similarly to offsets - they don't come out of the cap. They are added to it so any early reductions would be added to the cap.

Larry DeWitt, Pace Law Center

This is a follow up on Derek's question. Do we have any sense of the magnitude of the early reduction credits? Have we done anything to get at the overall impact on the allowance prices and targets and so forth. Obviously, the overall cap is something we'd be talking about, and whether or not it's a real enough cap, and this seems to go in another direction. Can you frame some magnitude?

The point behind the early reductions credit is not to have people delay their reductions until after the cap is instituted. We walked through the potential ways we could implement this provision. We didn't get much feedback on it, but I'd refer you back to that slide presentation we did.

Chris Sherry, NJ DEP

The timeframe is fairly limited. We're talking about a timeframe from agreement to an MOU through that interim period up to the start of the program in 2009 so the ability to implement projects, to do such things as increase your heat rate or fuel switching, is fairly limited. So there is a temporal limitation as well on the magnitude of potential emissions reductions.

Larry De Witt, Pace Law Center

It's just that some of us who are looking at those one dollar allowance prices and thinking this is getting close to not having much impact we are going to have to wonder, and I assume you will too, if the volume of early reduction credits might displace the validity of the program.

Chris Sherry, NJ DEP

Also bear in mind that during this time period we're talking about, there is tremendous uncertainty. We have legislative processes and rulemaking going on, so there will be risks associated with doing early reduction projects. But the point of this provision is not to have someone put off what they were already planning to do.

Larry De Witt, Pace Law Center

I don't disagree. The issue is whether or not that should affect the overall cap

Chris Sherry then presented the offsets component of the Staff Working Group proposal. He explained that RGGI is setting a precedent by applying a limit on offsets. The EU program and the Kyoto protocol do not apply a discrete limit on offsets. The limit will be applied as a percentage of the emissions budget, and on this basis, the limit averages about 3% of the emissions budget through 2020.

One or more Stakeholders, Resource Panel members, and observers asked the following clarifying questions on offsets (*questions and comments in italics*, responses by Chris Sherry unless otherwise noted):

Chris Wentlent, AES

Are the offsets constrained to the RGGI region or can you actually realize them globally?

In the modeling, the offsets are constrained to the RGGI region for the short-listed offsets that would be in the rule. The supply curves were based on the estimated tonnage available in the nine-state RGGI region. Obviously, CDM credits are assumed available at \$6.50 a ton so the model does have the option to select CDM credits if the allowance price hits \$6.50 a ton and it's economic to do so.

Chris Wentlent, AES

In the business-as-usual line on the graph, what is the business-as-usual case? Are we using the reference case or the high emissions case?

For the modeling, we used the reference case emissions projected in IPM for the package run and the difference between those projected emissions and the actual cap limits that were input into the IPM model. So it is specific to the IPM runs at least in the context of this modeling exercise.

Michelle Manion, UCS

I was curious on a couple of your numbers. First of all, could you clarify, you said the SWG was going to use consistent guidelines in terms of the Massachusetts five point criteria, but will those be explicitly described and contained in model rule? And my

second question, you mentioned that approximately three percent of the emissions budget is what this translates into. How did you get to the number 3% and what does it really mean?

As to the first question, I'm assuming you are referring to whether there is going to be overarching language in the rule, if it lays out those general criteria that would be applied to each of the standards. That is a point of discussion right now, but I can say that the individual standards would utilize those requirements, so they would be consistent with the 729 requirements, but it is a point of discussion in terms of whether in addition to that you would have overarching language as part of the model rule.

In terms of your other question in how we got to that number, essentially it was an analysis based on each year within IPM's three-year run years, looking at 50 percent of the difference between IPM's projected BAU emissions under the standard reference case and the cap limits that were applied in each run year. So, you had an annual limit on the offsets that the model could select, but, essentially, functionally you are applying a limit over the course of the modeling period because it does have an ability to bank allowances and has the perfect foresight function. .

To arrive at the 3% number relative to the emissions budget, we applied the IPM BAU emissions trajectory to the package proposal [cap schedule starting at approximately 150 million tons of CO₂]. So, the 50% limit results in a tonnage amount that is equal to approximately 3% of the emissions budget in the package proposal.

Jon Russell, Northeast Utilities

I thought if we were going to develop a short list with specific criteria that would avoid the need for monitoring and verification because you'd already detailed it out -

Well, the monitoring and verification criteria would be detailed, but we will need to see actual monitoring and verification data to insure that those reductions have actually been achieved.

Jon Russell, Northeast Utilities

And is independent verification required, which could mean additional costs?

For certain projects, if they're fairly straightforward, potentially like landfill gas, the states may be able to do that verification themselves directly. There may be situations where we feel it's prudent to have third party certification depending on the specifics of the type of offset that we're dealing with. But we would need some kind of assurance after the fact that those emission reductions were achieved.

Jon Russell, Northeast Utilities

Could you buy early year offsets and bank them for later years?

Yes, offset credits are bankable. Essentially they would be converted into allowances and those allowances are bankable on an unlimited basis.

Michael Bradley, MJ Bradley

Have you looked at how you're actually going to launch this? It seems like you are looking at a pretty significant undertaking to get the whole process developed so that we have highly credible offsets beginning to be approved relatively soon. I think there are expectations that once the MOU is signed, that you're going to send a signal to the market and people are going to want to start down the road of acquiring offset approval. I'm concerned about how fast the implementation process can be developed and in place for that process to start.

Obviously there's going to be some remaining uncertainty in the period up to 2009, as the states go through their rulemaking and/or legislative processes, but the criteria that we're developing will be fairly detailed and they will be specified in the model rule so you will have a good sense of the criteria that the states are collectively utilizing to move forward with their individual rulemaking. This is one of the areas that we do have firm agreement on, that there needs to be consistency across the region in each of the states implementing rules and they need to be materially consistent especially on this issue.

In terms of actual administration, we have acknowledged that this is an issue where a regional organization could be of value in providing technical assistance to the states in reviewing offsets applications, but also in developing additional guidance protocols that would further elaborate the fairly detailed standards in the model rule to help project developers through the process and insure they understand the criteria.

Franz Litz, NY DEC

Just to follow onto Chris's answer and to your comment, Michael, the offset short list that we chose was, in part, chosen because there's a lot of good work on it. For example, on landfill gas and SF₆, the EPA has done quite a bit in the way of guidance. So there is a lot we can draw from to bring those two up to speed pretty quickly. Afforestation is also really straightforward, it's just that we do have some thinking to do in terms of how to do the verification and who would do it.

Chris Sherry, NJ, DEP

That is the reason we developed this short list, because it was pretty straightforward to develop standards for and to implement.

IV. IPM Modeling - Steve Fine and Chris MacCracken, ICF Consulting

Steve Fine and Chris MacCracken of ICF presented the latest IPM Modeling, which has been updated in the course of developing a new reference case. Steve Fine presented the three categories of changes that were made to the original February RGGI Reference Case, to arrive at the updated August Reference Case.

1. Assumptions updates to take advantage of more recent fuel market projections.
 - ❖ The change increased 2006 gas prices relative to the original Reference Case and resulted in mid- to long-term gas prices (2010-2024) averaging 7.5% higher (\$4.89/MMBtu v. \$4.55/MMBtu, in year 2003 dollars).
2. Near-term calibration measures to bring 2006 model projections more in-line with recent market experience
 - ❖ Near term oil/gas steam generation in New York and the RGGI region has been calibrated to approximate recent historical levels.
 - ❖ Transmission flows more closely represent 5-year average historical levels in the near-term.
3. Capacity market adjustments
 - ❖ More closely represent New York's upstate capacity market.

One or more Stakeholders or Resource Panel members asked the following clarifying questions about the reference case (*questions and comments in italics*, responses by Steve Fine or Chris MacCracken unless otherwise noted):

On the reference case on the environmental assumptions for NO_x, SO₂ and mercury, can you just kind of clarify what those are?

At the point the modeling was undertaken CAIR had not yet been formally proposed, and Clear Skies was on the table, so the SWG, not wanting to take a specific position on those, came up with an amalgam of that kind of policy, which, for the Eastern interconnect and the RGGI region, looks very much the same. It's a cut in SO₂ and NO_x in 2010 and also a cut in mercury and then a second phase cap for all those in 2015. So it's similar to a national Cap and Trade program.

Chris MacCracken added that all the state programs are also held, so for MA, for example, and CT, their state programs are also in place.

Did you get any calibration on the renewables, on wind for example?

We didn't do a specific calibration. As you remember early on there were some limits put on as to how much wind could be built in that first run year because of production tax credit assumptions made in the modeling, that there was a production tax credit available

up front that was phased out. The model was taking advantage of that tax credit, overbuilding to begin with and sort of banking those wind credits forward. We put a limitation on that in consultation with the SWG, the Stakeholders and Bob Grace, who developed the renewables assumptions, but there was no specific calibration done as to how many renewables were in the market. The RPS targets that the states have are assumed to have been met.

Historically have the RPS targets been met?

Some states, MA among others, are having difficulties running up against back stop price issues, but for the long term analysis, given the fact that this is going out to 2024, we assume that they were met.

I'm wondering where gasoline prices for my own use are going to go, so where did your oil prices go?

We maintained the same relative relationship between oil product prices and gas prices that we had in the original reference case and that was a relationship that was indexed off of New York harbor prices relative to delivered NY gas prices, so it was on a region by region basis.

They are sort of tagged on a million BTU basis?

Yes.

So then oil would go to 33 dollars a barrel or something like that?

The long term forecast was based on an AEO 2005 - it was the average between their reference price forecast and their high oil case forecast, so we could look at the AEO and the average of those two will tell you what the dollar per barrel projection is.

One difference from the old reference to a new reference is that you've got a number of oil/gas units, which you're requiring to run. The model is treating them more or less as a must-run unit? There aren't a lot of them, the sliver is fairly small for the number of units involved - my question is really is there significant overall modeling impact from the assumptions that you make? By making them must-run plants, which may not be the case, is there any economic distortion of any significance or don't we know?

We went in and for a category of plants forced a minimum amount of generation. I don't know if we can really talk about the distortions that took place but you are getting slightly more emissions coming out of that. You are referring to distortions in the power market?

Yes. About how many megawatt hour units are you looking at? Is it really quite small?

We looked at historical averages and relative to the generation in RGGI you can see that it's small. The calibration was done on a pro-rated basis. It wasn't one to one. The first

year it was 50% of historical and then after that it was knocked down to 25%. So it was watered down but it was more to get some recognition of the fact that we were under-representing generation from those oil/gas units compared to historical averages.

Did the reference case take into account the 316b closed cycle cooling issue that is confronting at least our membership?

We didn't account for those regulations per say. What we did is just in new unit build costs we were working off of multipliers that had come out of some of the proceedings that are going on in NY to develop the demand curve and some of those others in New England as well, and so we calibrated new build costs that are taking into account some of those costs. But in terms of how existing plants are run, we did not account for that.

Did you say that transmission constraints would be lifted in 2012 so there would no longer be constraints between the regions?

No, I'm sorry. I misspoke if that's how I was understood. We have transmission constraints, total transfer capability constraints. So, between each region we have specific line capabilities, line capacities represented and it was just in the near term, we constrained those lines even further to calibrate to historical transmission flows. In the longer term, we took off those calibration constraints but left in place the original constraints that were developed in conjunction with the various ISO's in the region.

Franz Litz, NY DEC

The reason for that is we in NY got a lot of comments, including from our ISO, that the near term imports that the model was showing were exaggerated and it was at the expense of the oil units.

Same stakeholder follows up:

How will natural gas pricing be handled within the RGGI region associated with natural gas distribution issues?

We have a Henry Hub price that is input and essentially supply curves developed that calibrated around that wellhead price, but in addition to that there are transportation adders and seasonality adders that get added to the Henry Hub price to represent the cost of delivery to generators in specific regions.

Steve and Chris then moved on to present the Package Scenario, based on the new RGGI Reference Case, which includes the following:

- ❖ CO₂ Policy – Phased-in cap to 2020

- ❖ Offsets – Combined RGGI and CDM Offset Curves, Limited to 50% of Required Reductions
- ❖ End Use Efficiency – Technology costs, load shapes, load factors, and potential supply by sector are based on data provided by ACEEE. Program costs to implement measures are based on average of RGGI states’ actual expenditures through 2004 to implement public benefit programs. The Package Scenario assumes that current levels of annual state expenditures for public benefit programs continue through 2025.

They then explained that the Package Scenario with what is called the Federal policy - US and Canada national carbon policies - adds the following:

- ❖ US policy assumes stabilization at projected 2015 levels starting in 2015
- ❖ Canada policy assumes stabilization at projected 2008 levels starting in 2008

One or more Stakeholders or Resource Panel members asked the following clarifying questions about the package case (*questions and comments in italics*, responses by Steve Fine or Chris MacCracken unless otherwise noted):

Is a significant fraction of cumulative savings coming from the continuation of existing EE programs?

There are baseline questions in regard to what is in the reference case load forecast versus the reduced load forecast when one assumes continuation of current spending levels. It was our understanding, and many of these load forecasts were provided to us, that in many of the forecasts we received, some of that funding, or some of those programs were continued for specific amounts of time and then essentially were dropped off. And what this does in the package case was continue those spending levels and the EE reductions resulting from those levels.

That's not what I was asking. I'm asking a more basic question. Earlier, Chris was showing us the BAU for example, and then you were calculating potential offsets as a fraction of the difference. But if we say that BAU means that we are phasing out our energy efficiency programs, then I think that's an important point and it may end up, if it's a big fraction of all savings, then it creates a big swing in the model.

Chris Sherry, NJ DEP

I think the crux of your question is, to what degree do the current ISO load forecasts capture current SBC programs and their impact and also historic efficiency programs through the integrated resource planning process. What was done in the model is we did apply an incremental efficiency resource and the amount of efficiency that was essentially selected by IPM was limited based on what could be achieved based on

performance and spending of current SBC programs, what kind of kilowatt hour reduction could be achieved for a certain level of funding, and that was used solely to limit the amount of efficiency resource that IPM was able to select in those runs. So then the question of whether that represents current SBC spending or not is really a question that gets at how well the current ISO forecasts actually capture the impact of current and historic efficiency and DSM spending.

I think I'm asking a simpler question and I apologize and I'm sure someone can answer it: to what extent does the BAU or reference case have built into it an assumption that energy efficiency spending will not continue at current levels.

Chris Sherry, NJ DEP

There is no explicit assumption to that effect. We're using the ISO load forecast. I do know for example that at PJM they do not explicitly include megawatt hour savings through SBC programs. It's more of a regression analysis between historic load and GDP growth and then they go forward based on a GDP projection in terms of forecasting load into the future.

Steve, I think you said that in the package plus national program there was additional wind because it became cost effective. At what allowance price does that happen?

At ten to eleven dollars per ton. The economic wind builds that we were getting occurred within the last two years.

On the increased cost related to the national program, do we have any sense for how much those costs would be mitigated if there was an allowance to use additional offsets within the program, and then, for Chris Sherry, are those additional offsets available?

It would certainly lower CO₂ prices in the RGGI region. It's completely dependent on the offsets assumptions.

Chris Sherry, NJ DEP

Steve and Chris, correct me if I'm wrong, but in the higher emissions scenario we did hit the quantitative limit on offsets within the RGGI region.

Right, so you see prices rise above that \$6.50 CDM maxed out because you're requiring further reductions on system, not just through bringing in offsets.

I thought we did know that the reference case doesn't include ongoing EE, SBC type programs, that basically the ISO/RTO load forecasts that we were provided assumes that those programs terminated in the next several years?

That was my understanding regarding the New York ISO forecast – current spending levels are included, but only for a couple more years.

Is this the case for PJM also?

Chris Sherry, NJ DEP

It's my understanding that the NY ISO forecast explicitly factored in SBC savings. That's not the case for PJM. I don't know whether it's the case for NEPOOL or not.

In terms of the impact of the energy efficiency assumptions -- as I understood from the phone conversation we had on modeling a few weeks ago -- that when you look at the impact of CO₂ allowances and look at how the Cap Only number comes down for CO₂ allowances due to the package, that two thirds of their reduction was due to the offsets and one third was due to the energy efficiency programs.

That's right. From some earlier work we'd done where we had modeled a Cap Only and done some sensitivities around the Cap Only and then the addition of the energy efficiency on top of that, you could see that the relative reductions were of the order of magnitude you'd specified.

Could you describe the federal policy that you're modeling outside the RGGI region to begin with?

It's stabilization at 2015 levels from the modeled reference case, so it's consistent within the model. So we took emissions from 2015 levels -- the 2015 forecast in the rest of the country -- outside of RGGI and just flat-lined in the cap at that level and did not allow any offsets.

I'm trying to put the five to twelve dollar allowance price into some context from other modeling that's been done by ICF using IPM and that's the national cap under Senator Carper's bill that stabilizes electric generation emissions at year 2000. In that analysis, the projected national allowance price is somewhere between two and four dollars a ton. Offsets come in at one or two dollars a ton and it just doesn't seem to fit with this analysis.

The Carper analysis that was done at that point allowed unlimited offsets and that has a huge role in mitigating the carbon price because essentially you are buying your way into compliance. There are very few reductions that have to occur on system. This [RGGI federal policy scenario] was more of an analytical exercise to stem the leakage issue from the rest of nation.

Franz Litz, NY DEC

I want to remind people the reason why we started to do the federal policy runs. In some of the early runs in the BAU scenario, IPM was calling for builds within the RGGI region, but then, when you put the cap in, we were seeing a shifting of some of those builds outside the region and it was causing leakage and imports. We decided one way

we could more accurately represent that - recognizing that build decisions factor in a whole bunch of real world considerations that are not done just by economics, such as NIMBY concerns etc. It seemed unlikely to some of us that these plants would pop up to serve load in RGGI area when there is an expectation of a federal program coming down the pike. So this was the proxy for capturing the expectation that there will be a carbon constraint long term. It's not perfect, but we wanted to see what the model would do if a federal policy were to come in.

There were a couple of other factors. There were lower gas prices in that analysis, I'm not sure if it was four dollars – and there was a provision for early reduction credits – there were other things going on - and this was just a stabilization at 2015 levels to see what the impact would be, really on leakage and then on generation in the region.

There will be a new EPA analysis coming up of the Carper bill and other multi-pollutant bills in the next couple of weeks. From what I can tell, the CO₂ cost impacts are going to be pretty similar to what they were a couple years ago. Maybe there are assumptions that are still somewhat out of touch with energy prices today – I don't know – but I think it's a helpful reference when you look at the implications of federal policy on RGGI.

Two slides ago you had CO₂ prices in RGGI under the federal program that's constrained trading within RGGI, is that the idea so that higher cost in the national program is because there's no trading across the border?

This scenario represents a “what if” scenario, what if the rest of the US emissions were essentially flat lined so in 2015 that you effectively could not have any leakage across the border. It represents two systems living side by side but unable to trade with each other, so it's a misrepresentation if you will. It was really meant to get at the whole leakage question.

Can I follow up with a question to the SWG? Will you build provisions into the rule for merging with a national program, particularly if the program nationally is different than RGGI?

Franz Litz, NY DEC

That has been a topic of discussion among the staff and State Agency heads. We've had comments all along and more recently about what should happen in the event of a national program. In the latest McCain-Lieberman bill in part due to the help of Environmental Defense, they inserted protections for states that are first movers with carbon caps. So that's one approach, we may want to use our delegation to get favorable treatment in a federal law. An alternative is, rather than be grandfathered, our prospects are better just to fold up camp and merge into the Federal program. So we'll need to consider those other factors in building into the MOU review and 2015 review and the ongoing review about what will happen in the event of a federal program rather than have a provision that just automatically shuts it down. That leaves some of the flexibility out if you did that.

Does your analysis say anything about the distribution of rate increases and of leakage among the RGGI states?

That will be in the results that will be published. I'd be careful to define it as rate impacts. These are wholesale power impacts, not rate impacts, but we also have it on a state by state basis.

Is that something you can talk about now?

You'll see the retail rate soon when we move to the REMI presentation in a few minutes.

The other question was on the bar charts, where you said the differential was leakage. What does that number turn out to be in terms of percent?

If you look at 2015 the difference in the height of the bars is about nine million tons, so you're talking about 15% there. By the time you get to 2021 the difference is twenty five million tons, so about 13%.

On slide 15 in the runs you sent out that were discussed in the modeling conversations you had another slide that showed what the effect of the "Cap Only" is. Do you have that slide?

No.

In any case, the effect of the "Cap Only" when you didn't include the additional EE, and the offsets and the carbon fund, the effect of the "Cap Only" showed that the leakage was almost 100%.

It was very significant.

The right hand part of those slides was almost invisible in 2015 which suggests that the cap had virtually no effect on emissions when you take into consideration leakage. It's only EE and the offsets and the SCF that reduce the leakage from nearly 100% down to 13%, at least that's what that slide seems to show.

Franz Litz, NY DEC

It's a function of the price differential on the two sides of the borders. And it's an economic model so if the price differential gets so high it's going to choose those external resources and bring power in through imports. The allowance price is very different in those two scenarios, too. So if the price per ton is higher, there will be more pressure to bring in cheaper imports. If the price is lower, that relieves that pressure. So the offsets and the EE are serving a cost relief function which leads to significantly lower leakage.

I think it gets back to the question of what the impact of the energy efficiency is – it's the critical factor.

When we looked at the impacts, about a third of the price reduction in terms of the allowance price was due to EE and two thirds due to bringing offsets in to the system. Together those lead to a reduction in the allowance price which results in the lessening of the power cost impact which then mitigates the impetus for leakage, which is the selling of lower cost power into a higher cost area.

How do you calculate the tonnage for the reductions attributable to the Strategic Carbon Fund and is the decision to attribute those to solely outside the region a modeling input or is it a modeling result?

No, the SCF is completely a post-processing add-on and it's really taking the revenues from five percent of the allowances and assuming you can buy the reductions at five dollars a ton.

Chris MacCracken, ICF

And as it's showing on the right, it's essentially reducing some of that leakage, you are buying away some of that leakage. That's why we reflected it as being on the right.

Chris Sherry, NJ DEP

Just to clarify regarding the SCF, projected emissions reductions from the SCF assume taking the allowance price output from the IPM model and assuming you can achieve project-based reductions for \$5 a ton. So it's really a function of that assumed reduction cost and the modeled allowance price in terms of the reductions that you can achieve. We feel that \$5/ton is a pretty good benchmark estimate. It's fairly consistent with the elbow in the supply curve for the RGGI modeled offsets and it's also consistent with project data for CDM projects that we've seen through the World Bank Prototype Carbon Fund and other CDM funds, as well as what other organizations are looking to achieve offsets for through a similar mechanism through the Climate Trust in Oregon. Their RFP seeks projects in the \$5 per ton range, so we think that is a good benchmark.

To what extent are T&D issues reflected in the model?

It's a wholesale model so we don't address the distribution issues per say but it is addressed indirectly because of the EE and the lower load that therefore needs to be met and lower peak demand, you have less pressure to build. In the next set of slides we show capacity additions and the difference between what happens in the reference cases and then in the package case, which partially gets to what you're asking.

If offsets were allowed to be unlimited how much would this differential between pre-federal program and actual federal program be eliminated?

Unlimited outside the RGGI region, the US, or just within RGGI?

In the initial program, if we allowed the unlimited use of offsets versus capping it, how much of this differential would be avoided when we finally move to a federal program.

Within the RGGI region we didn't use all the offsets, so within that blue line price, you are not ramping up to the \$6.50 mark per ton, which is the top step of the offset curve, so you've still got a lot of offsets remaining to use just within the RGGI curve.

Within the green line though, with the federal case, we do use up, up to 50% because if you use less than the 50% of the allowable offsets you essentially would have had that allowance price top off at \$6.50 which is essentially the backstop price from these unlimited CDM tons that can be brought in. The fact that it goes above that means that we used up all those allowances and then are requiring additional reductions on system which have a cost.

ICF then described the High Emissions Case modeling and results:

Higher long-term gases prices. We had about \$7 Henry Hub that's 2003 prices, in 2005 terms that would be \$7.30, a million BTU, going out over the long term. In addition to that we allowed coal builds in RGGI. In the reference case analysis we allow coal builds everywhere but RGGI. In the high emissions case we allow them in RGGI. The result of that is, if you look at the capacity additions, in the reference case it's gas and it's renewables from the RPS, that's what's dominating the build decisions. Once you put a package in place, so the carbon cap, along with the EE, along with the offsets you are keeping the required amount of renewables because of the RPS standards and you're essentially tagging gas, so you get about five gigawatts less of gas builds. This is cumulative from 2006 through 2024 in terms of projected economic builds that the model is building on its own.

Under the high emissions case new gas builds take a substantial hit. We're only building about six gigawatts of new gas as opposed to about 21 gigawatts of new gas in the reference case and the new build mix is dominated by coal, so we have about 18 gigawatts of new coal coming online through 2024 in the RGGI region. On top of that we have a slightly increased amount of wind because with \$7 gas you're getting economic builds of renewables as well.

In the high emissions plus package case, when we put the package case as well as the cap and the EE and the offsets on the high emissions case, new coal takes a hit but it gets cut in about half, so we're still seeing about nine gigawatts of new coal. Gas takes a further hit, and the winner in terms of new capacity builds, is wind. There's a collapsing of the REC price, no REC price is needed to bring on wind because it's economic in its own right.

Generation looks very similar to the reference in the package we've seen before. The package is about 25 terawatt-hours lower due to the efficiency. When you look at the

high emissions and the high emissions plus package you've got about three times as much coal generation as you did from existing coal that you had in the reference case. When you put the package on the high emissions case you're reducing that to about two times what original coal generation was.

In the high emissions plus package you've got significantly increased imports. When we have the high emissions case the whole country is facing this higher gas price, not just the RGGI region, so we have significantly increased coal builds outside of RGGI as well. So there's a lot of excess capacity of coal that can be imported into the RGGI region.

In the high emissions case without the package you get up to just over 180 million tons in 2024 as compared to 140 million tons in the normal reference case, a substantial increase in carbon emissions. The bump up occurs in 2012 when we allow new coal builds.

In the high emissions package case, the amount of offsets is substantially higher. With the high emissions package CO₂ allowance prices start at \$3.50 per ton and then hit \$6.50 per ton in 2018 and essentially flatten out after that because up to 50% of required reductions are available through CDM. \$6.50 becomes the backstop price in this scenario.

Start at 70 terawatt-hours of imports in reference case and end up with about 36 terawatt-hours of imports. When you put the package on that you increase it to 50 terawatt-hours because of coal builds outside RGGI.

Once you put a policy in place in the RGGI region, a lot more imports come in, resulting in greater leakage.

With all three --the high emissions plus the package plus the federal case you've hit the 50% offset limit and you have to make reductions on system, so that allowance prices go up to \$11 per ton in the long run.

Adding the federal policy to the high emissions package takes it [wholesale firm power price] up about nine percent in the out years

One or more Stakeholders or Resource Panel members asked the following clarifying questions about the high emissions case (*questions and comments in italics*, responses by Steve Fine or Chris MacCracken unless otherwise noted):

When is BAU going to be determined, and if it's determined, do you put a cap on the number of offsets allowed from the start. If the limit is set now, as opposed to based on whether we have high emissions or not, is the price going to go up dramatically? Is that being taken into account and how would that be addressed?

Chris Sherry, NJ DEP

We're going to be monitoring the status of the market on an ongoing basis, notwithstanding the full comprehensive 2015 review. So if you're seeing a situation where you are dealing with allowance prices significantly higher or lower than projected there could potentially be a need to reevaluate that [offsets] limit.

When do you expect to set BAU? A few years in advance, or in 2009?

Chris Sherry, NJ DEP

Those specifics are still being evaluated.

Franz Litz, NY DEC

How do you think we should address this?

I don't know if you should track allowances or emissions.

Chris Sherry, NJ DEP

Both.

So you're just capturing the price increase from the policy, not the price increase from higher energy prices?

Yes I believe that's right.

If the BAU case is changing on a yearly basis that could effect trading going forward because if all of a sudden more offsets get into the market it could make a deal that you actually entered into change in value. Something to consider as you go forward.

What type of new coal is built in RGGI region under the high emissions?

I think it's all IGCC. We allow two types, supercritical pulverized coal and IGCC but most of what gets built is IGCC.

ICF then reviewed the low emissions case, and there were no questions about it.

V. Retail Rate Impact Analysis and REMI Modeling Results - Lisa Petraglia, Economic Development Research Group, Inc. and Dwayne Breger, MA DOER

Dwayne Breger from MA DOER and Lisa Petraglia from EDRG then reviewed the latest REMI runs, and entertained the following questions and comments from Stakeholders and Resource Panel members. (*questions and comments in italics*, responses by Lisa Petraglia or Dwayne Breger unless otherwise noted):

Is the IPM model accurately depicting differences between states? How much of these price differences are what the generators would see, versus what the average load serving entity might come up with as a package of short and long term contracts to satisfy its consumers? I wonder if these differences, which seem kind of high between states, are really likely to be that different.

Keep in mind that these results, as they apply to household bills, are not only impacted by the relative percent change of the retail price of the residential sector but also what the baseline typical household bill is for the different states, which is apart from the IPM modeling and range from about \$600 to \$1100. IPM provides output on a state level too, which is what we've used here to translate to the state-level retail prices. We're doing this on behalf of the SWG as the regional group together. There is opportunity to go into more state-specific detail analysis. But although the relative magnitude may shift a bit the magnitudes that are presented both in the IPM modeling as well as this conversion analysis are probably still relatively valid.

With the high emissions price, in every case, in every matrix box, we go up in price, except for New York, which goes down in price from 2015 until 2021. Can you explain that?

The data set we used from the different pools for their historical differentials between retail and wholesale prices is going through some review and will be upgraded to the extent that we feel like we haven't captured the best data that we can find at this point. So there's maybe some impact there, but I would basically say that what you are indicating here would really be reflected more on the IPM modeling side, which I presume that the data that would be underneath this would indicate that the relative price change for NY between 2015 and 2021 in the wholesale price would have gone in the opposite direction than the other states.

Chris MacCracken, ICF

I don't think we have that data to look at this point.

The package includes the Public Benefit Fund, but the impact of that component of the program, either in the form of energy efficiency programs paid for by the fund, or reducing demand and therefore lowering bills, or straight rebates or whatever you do with that money - that the impact of that component of the package is not showing up here in terms of lowering the impact of electric bills. Is that right?

That's correct. In fact, that is taken into account in the REMI modeling which Lisa will get to in a moment.

Are we sure that when we look at the impact on consumers that we are assuming the base before we have the CO₂ package includes that higher gas price in it so that we are not throwing in as part of the impact that higher assumed gas price?

That's correct.

Do you also have the information with the national program?

Not at this point. We will be documenting that in the coming weeks and certainly in the final report. We haven't done conversions for the retail prices and we haven't done the REMI modeling on those scenarios yet.

Lisa Petraglia added that those last two slides that Dwayne showed, which was the typical impact on the household bill, was purely for exposition, to give some idea of what that percentage increase in retail rates under either of those two scenarios would look like. She pointed out that the REMI Modeling, as she and Dwayne Breger showed back in May, actually gets the proposed retail price changes right into the system and passes the savings onto households.

Lisa reported that the big addition from May's presentation is the incorporation of how energy efficiency will affect the regional economies, not to mention that the reference run was recast. The concept of the basic package was recast, so the underlying wholesale price changes, capacity addition predictions, and then the energy efficiency is all new material.

You've modeled the original policy package which has continued energy efficiency investment at historic levels, is that correct? But you haven't modeled the last IPM package with the doubled efficiency? Are you planning to do that?

Yes, all the final set of IPM models, scenarios and sensitivity studies that are run will have analogous or associated runs through REMI.

Any chance that might happen before the 28th?

We have to find out from the SWG what the priority of the next set of runs is that we can get out for next week.

My concern is that the efficiency modeling has only really been completed in the last few weeks and that the commissioners got their first exposure to this in July with a set of data that was extremely weak when it came to energy efficiency. So for the Commissioners to make good decisions and to support the best conclusions in the MOU it is absolutely essential that the IPM and REMI runs be completed and be fully presented to the principals before they make any final decisions.

You were just looking at the difference between extending the programs and not extending the programs, right? You weren't looking at any additional efficiency that might result from a program like this, right?

Correct.

Is it the case that the RGGI program ends up being more efficient than an SBC program based on more optimistic administrative charges? I think you'd mentioned that 36 percent of the costs of RGGI are administrative. Can you then assume that the SBC administrative costs are much higher than 36%?

The 36% is just to run the energy efficiency component that is now considered as part of the package. I don't think it's fair to say that that's an administrative cost for administering the package.

Right, that's strictly the administration of the EE programs and that's based on historical trends we've done a lot of analysis on in MA EE programs.

So then why is it more efficient than SBC program?

Are you asking about the efficacy compared to an existing SBC program?

Yeah, I think that's the question.

Franz Litz, NY DEC

Correct me if I'm wrong, but I think the attempt was to model continuation of existing SBCs so that, they didn't model the 20% that would go to energy efficiency [through the consumer benefit allocation], that's extraneous to this.

Right, it's not part of the reference run.

The modeling had to use the current system benefit funding model for looking forward, but in fact, states that are moving faster on these issues are structuring the requirements differently. They're using efficiency resource standards; they're using a resource acquisition mode for acquiring efficiency. We're seeing costs coming in at half to one third of historic system benefits type costs so I don't think you should assume that the way efficiency is procured by states in the future is not going to be the same as in the past.

Break for lunch

VI. Feedback on Staff Working Group's Proposal

Dr. Raab reconvened the meeting and encouraged the formal stakeholders and resource panel to give feedback on the staff working group proposal. He said that he also wanted to give time after the formal stakeholder and resource panel questions and feedback, for the observers representing broader stakeholders and the public in attendance, to ask questions and give brief comments. He presented the following three questions for discussion to be answered in chronological order:

1. How fairly balanced is the RGGI SWG proposal, and what suggestions, if any, do you have for enhancing its balance? Dr Raab added that obviously, this process has involved many different stakeholders advocating for different, often opposing things, and that the SWG has spent a lot of time trying to incorporate stakeholder feedback

2. What specific feedback do you have on key aspects of the RGGI design (such as cap level, apportionment, the regional Strategic Carbon Fund, the 20% public benefits allocation, and the offsets provisions?)

3. What suggestions do you have to ensure the successful implementation of RGGI?

In the discussion that follows, responses to these three questions put forth by Dr. Raab were not sequential and the topics tended to overlap. We are reproducing this discussion as it took place.

Derek Murrow, Environment Northeast:

- 1 The program, as it's been modeled, is reasonable, but the current cap level is inflated above what has been modeled. 150 million tons is inflated and we believe it will be cheaper than you modeled. The California RECLAIM, (which I'm not an expert on, but I'm sure people on the Resource Panel know about) is an example of what happens when the cap is set too high and you really don't get the market you are looking for and changes in investment and performance, and in that case they ended up switching back to command and control system when the market really didn't function
- 2 Cap should be back at the 143/145 million ton range
- 3 The goal is to reduce emissions in the electricity sector. Because of the large size of the offset pool, we don't see emissions going down much due to offsets. The offset limit should be reduced. I was glad to see more detail in the offset proposal and I think you're on the right track there in terms of how its set up structurally limiting facilities, not having a limit on a state basis.
- 4 The allocations should be focused on consumers, since the costs will mostly flow to consumers. The current language makes it sound like some money could go to efficient new generators. The definition has got to change. The Public Benefit pool should be higher and renamed something like, "Consumer Benefit Pool." Overall this is a positive proposal and we appreciate all the good work you've done.

Bill Prindle, ACEEE

I've been through other processes before and rarely seen such public access, good analysis and really hashing through the tough issues. Focusing on the efficiency side of this, I think there is conceptual balance in current proposal, however I also suggest that

the proposal needs to catch up to the modeling process. The initial program was floated before all the efficiency modeling was completed

- 1 There needs to be a doubled commitment to EE as part of the final RGGI package. EE doesn't automatically happen in the power sector within a Cap and Trade program, it's an indirect emissions reduction, has double counting issues, and so it has to be addressed explicitly
- 2 There should be larger public benefits. Increase the consumer program beyond the 20%. If we are looking at the low allowance prices we're currently seeing in the modeling, at \$2 a ton and that range, and you look at 20% of that, and even if 100% of the consumer allocation went to EE which I don't expect, we would probably see no more than a 10% increase in total regional funding for efficiency if that was the sole basis on which efficiency were to be funded. So obviously that doesn't get you a doubling.
- 3 MOU should focus on a resource acquisition approach to EE and specifically encourage states to set resource targets for efficiency. CT and NJ already going in this direction. This approach can actually give you the resources at lower costs. You may not have to double spending to double impacts from efficiency. This has to go in parallel with and outside the cap, and will take some inter-agency cooperation. Looking to see that kind of language in the MOU.

Sonny Popowsky – PA Consumer Advocate

If I understand how the PJM and the New England markets work, the market price of the allowances is going to be included in the market price of energy for basically every kilowatt hour sold because we use a single market clearing price in New England and PJM. So, whatever the price and cost of the allowances turns out to be, whether it's given away to the generators or sold or auctioned, that market price is going to be reflected in the price of energy, which means that, effectively, consumers pay 100% of the cost.

At least a portion of the benefits needs to be allocated to consumers, whether 20% is enough, maybe not. If you really want to have a balanced proposal, it's important to make sure a significant portion of the allowance benefits gets to consumers, either in the form of rebates or EE. I would support Derek's point that the greatest percentage possible should be allocated to consumers if you want to have a balanced proposal. Does anyone disagree with the principle that 100% of costs will be included in market price whether given away or sold?

Several people responded to Sonny's question:

Rich Cowart, RAP

Actually I think the concern is that more than 100% of the cost will be passed on to consumers. Because depending on design of the program, all three markets use a single

price auction clearing price, even megawatt hours that didn't require tons, like nuclear output, for example, will see the increased revenue.

Chris Wentlent, AES

The premise is partly correct. You also have to factor in the difference in the efficiency level of different fuel types in the marketplace. So in a one clearing price market, depending on what fuel sets the market clearing price, will determine that the cost compliance piece of it for CO2 compliance. So for example, a combined cycle gas unit is generally at about half the CO2 emissions level of a coal fired unit, and a fuel oil unit is in between those two fuel types. So if gas sets the price it will cover part of the compliance cost for a fuel oil or coal unit, but not the full cost and so you have two different issues that could occur. One is a unit that is very marginal, for example, the dual fuel or fuel oil units would be more at risk because of a lower capacity factor and therefore their economics could be more at risk. And then a coal fired unit, possibly still being net marginal to the market but less marginal, and then the natural question is how much of their total fixed cost do they cover through that energy sale. And that's going to be dependent on a whole bunch of variables that probably none of us in this room can put together completely.

Jack Alexander, Entergy

I just wanted to add that some of us, especially in nuclear units, do sell way out into the long-term market and we would not see the benefit of those higher prices, at least not in a direct one for one relationship. It could be argued that we might factor that into long term contracts going forward, however.

Ben Feldman, Natsource

I think there might be a misconception. Certainly the price of allowances is going to be reflected in wholesale power prices. That doesn't mean that all of that is profit to the generators. If the program is binding then generators will face some control costs. The control costs will be present even if you're an oil-fired unit or a coal fired unit and the clearing generator is a combined cycle gas unit.

Joe Kwasnik, NGRID

Sorry to stay with the same issue but we are an electric T &D company. We are not a generator. We do serve over 3 million electric customers across New England and New York, and as I like to say, we're always at the sharp end of the stick in terms of energy increases. Generators don't hear it, but we hear it because we're the ones that send out the bills. I want to echo what Sonny has said that we do think the bid prices will reflect the cost of the allowances whether they're sold or whether they're given away.

- 1 The economic cycle here should be balanced, so that if they are given or sold here to the generators there should be some compensation back to the electric customer to try to ameliorate some of those price increases.
- 2 My recommendation would be to have the SWG make a recommendation, instead of leaving it to the states, in terms of how the allowances should be handled and we believe they should all be auctioned.

Seth Kaplan, Conservation Law Foundation

A key element implicit in the question of balance is, Is it effective? If we have balanced proposal that doesn't achieve the stated goal of the program then it's the cliché about the operation was a success but the patient died. We want to support this program. The concerns are:

- 1 Is the proposal effective? Does it have integrity? Will it engender broad support beyond those talking about it for two years. Concern about cap size is not just conceptual or technical. It's key to whether the program has integrity.
- 2 We need to ask the question about whether the offsets provision undermines the integrity of the program. We need to structure an offsets program that does not do that.
- 3 The leakage question is very important. Will this result in less CO₂ coming up into the air, especially from power plants? We have to make sure not to do this in a way that undermines the necessary efforts as we move into other sectors.
- 4 To insure this gets broad support, we need to create a program that produces a tangible benefit. We need to show that this program addresses the very serious problem of global warming and pollution but does it in a way that produces a benefit people can get their arms around. A consumer allocation that produces a tangible benefit in terms of efficiency can advance the long-term goals of the program in terms of energy efficiency and will put us on a better trajectory.

Can we bring cap to a level that is more into line with what current emissions are? Can we take a harder look at that offsets provision in terms of does it undermine the program? Can we harness the economic energy of these allowances? With those improvements we honestly believe this can be a program that the governors and their staffs and everyone can be very proud of.

Ron Drewnowski, PSEG

People feel all these allowances are going to be sold for a profit, but the question is who is going to be buying them. So assume that in year one, the number of total allowances available is 95% of the need. Who are those allowances going to be sold to if all the generators in the region need that number of allowances or if there's offsets that are less

expensive, just to be able to generate? And if the offsets are less expensive, then they don't have a value, and if offsets are not less expensive then all the generators need those allowances.

Rob Sargent, PIRG

The question is really, does this proposal do the trick in terms of meeting the objectives of the RGGI process to begin with. We are optimistic because of the regional scope and where it is headed in the short term and we realize this won't solve the problem but will get us on the road to doing that.

- 1 We think the current proposal falls somewhat short of reducing global warming and pollution but we believe that, with some fairly minor tweaks to this, we can achieve a program that could actually get at least the same if not greater reductions at lower cost to consumers.
- 2 All past cap and trade programs were designed in a cost at service regulation world. This region of the country, at least for the time being, is no longer in that world. Generation is deregulated. The clearing price is what it's all about in terms of electricity prices and that very often does not reflect the cost either of compliance or even the cost of delivering electricity. We need to be confident the public is getting the best deal.
- 3 The public is willing to pay the incremental costs that were laid out here in the modeling today, if they are confident that the program has integrity, and that it will, A) do something and, B) doesn't have a lot of loopholes, for lack of a better word.

We hope that as new information about the benefits of efficiency and its ability to both help meet the cap and lower the cost of the program comes out that that will reflect how the SWG thinks about the allowances and also about the equity issues. Right now there is too much deference to generators and not enough to the people who are buying their product either directly or indirectly through distributors. In order for us to sell this product to the public we need to be able to look small customers, low income customers and large customers in the eye and tell them they are getting a fair shake and that's what this whole allowance debate is about. So hopefully we'll continue to see progress in the front.

Dan Weekly, Dominion:

Dominion has evolved. This is our second go around. We went through a process with the CT and Eastern Canadian premiers. We are focused on how to make this work and will submit our suggestions to the SWG. We need to see hard facts on the interplay between the states.

- 1 We need to figure out in the MOU how the states will deal with unit shut down. Our idea is simply that a ton reduced is a ton, whether in NJ or MA. Let's say we wanted to buy a unit anywhere in the RGGI region solely to shut it down, a marginal coal or oil unit, to derive whatever benefit, a credit or an offset. Is that not a good thing? How would that play out? How would those states deal with it if we shut down a plant? We'd have to have the benefit of that for the life of the program. Otherwise the numbers for us will not work,
- 2 Offsets pool should be expanded. I agree with Bill's point about EE. If a generator funds an EE program do we get an offset from that? Our load growth is double digit in south where we've invested a lot in EE. Capping load growth is very important. There needs to be a circuit breaker if the load continues to grow or if allowance prices go too high.
- 3 There are no back end controls now that fossil generators can put on these units. It's unlikely that any will exist by the time the program starts. By 2015 probably there will be. We believe if you really want program to have integrity there should be a circuit breaker if load continues growing too fast or allowance prices go too high to be able to step back, suspend it for a time, and tweak it

Steve Gabel, IEP NJ

- 1 Not fair to NJ and DE generators. NJ and DE only two states likely to be part of compact who are not in power pools where all the members are signing the contract. This is a different story from generators in other states. NJ and DE generators will be competing with PJM market not under RGGI. This really highlights the leakage issue.
- 2 This program has lot of integrity and analytical consistency within it, but if there is leakage to the degree that this RGGI region contains its growth in emissions but it only increases emissions of PA and OH, you don't have the result you wanted. NJ generators could be spending a million dollars to buy allowances while generators right across river don't face this. Because of the uncertainty of this leakage issue we need a lot of flexibility.
- 3 If leakage really is problem must be reviewed a lot sooner than 2015. We need to build in to the proposal an economic recognition that NJ and DE face a very different problem than other generators in the room.

Chris Wentlent, AES

- 1 We need review reliability issues in each control area and region overall. What are the additional transmission costs and additional gas infrastructure costs? Until we get this information can't make sound decision. Those studies must be completed prior to the model rule being finalized.

- 2 Reference case assumes all nuclear plants will be re-licensed, that lots of renewables will be available, that gas prices/infrastructure will meet increased gas demand. Take a closer look at that assumptions made for 316 B for existing units and mercury overall.
- 3 We should have global application of offsets, not constrained by region, which would reduce the amount of imports into the regions and set us up better in the event we do go into a national program.

Deb Donovan, Union of Concerned Scientists

I want to express my support and appreciation for comments by my colleagues, Seth, Rob etc.

- 1 We really want this program to go forward and work well with the emphasis and priority being getting real reductions from the power sector.
- 2 We need to better address in the design element the issue of leakage, explicitly in the model rule. In the event of significant leakage we need to know that something can and will be done.
- 3 Maximizing the consumer allocation and maximizing commitment to EE and renewable energy through the power of the allowance value helps a lot in dampening the risk of leakage getting out of control and undermine the program.
- 4 Concern that the baseline is inflated. Creates unfortunate perception that program is not actually reducing emissions from the generators relative to the cap itself.
- 5 Essential to include in the model rule the criteria for what is an offset with integrity. This can not be left open ended or left to be negotiated on a state to state basis. It really needs to be codified, explicit and detailed. Size of the offsets pool is troubling. Taking 50% of BAU seems risky. We don't know if that's too high or too low. It would be better to base it on what emissions are actually right now relative to what the reduction target is going to be.
- 6 Having a huge offset program or a program where all reductions are met through offsets would be huge administrative burden. Do we want to spend our time and resources on that? Using our time and energy to put the amount of EE into place that Bill has suggested, would be a better use of our resources.

Larry DeWitt, Pace Law Center

Lots of good work has been done by the SWG and the modelers.

- 1 The 20% public allocations number needs to be raised and I agree that it should be called a "Consumer Allocation".
- 2 Could we think about putting general language of principle into the MOU, for example that the total consumer costs of this program should be kept to a minimum and that a windfall to the generators should be avoided. Allocations should be no more than necessary to keep their shareholders whole. We want to keep the consumer costs down and we don't want anyone to benefit unnecessarily from the happenstance of how cap and trade works in a competitive wholesale environment.

Jack Alexander, Entergy

- 1 We support the proposal as submitted. We think this is a cautious and good approach to start. We think there will be small but tangible benefits.
- 2 The target which was set was judicious. We wouldn't support a substantial reduction at least at this time because we don't want to bet the economy or risk radical problems that could come if we pick too large a target. Depending on existing cap and trade programs is a good idea.
- 3 Original goals were to come up with a cap and trade program that reduced CO₂ and maintained a mixed generation. We also see that it maintains a balanced portfolio. We don't want to pledge our future to natural gas. The use of renewables, the maintenance of nuclear as well as some coal, keeps a mix which is good. We see balance throughout the proposal.
- 4 As we develop things on state to state basis there is a possibility for things to go awry. We would like fair treatment, so that those stations that emit should be treated fairly with respect to other emitters and that decisions should be based on the amount of CO₂ that they put out. If we allocate to non-emitting generators it should go to all non-emitting generators on an equal basis, including nuclear.
- 5 We need some off-ramps. Should be provisions in there, whether it's load growth, cost of natural gas, or severe economic recession, to allow delay or exit if necessary.
- 6 There needs to be critical mass of states or it will fail. All states need to do it together and no state should be hung out to dry. About 75% of the total CO₂ emissions number would have to approve this to have a workable cap and trade program and a workable exchange program.
- 7 It's not likely legislators will pass this verbatim. A year or two after this is approved there should be a reconciliation meeting to see if this can work as it was actually approved (rather than as it was proposed).

Luis Martinez, NRDC -

- 1 We are trying to achieve reductions in the energy generating sector at little or no cost to consumers. We value offsets as flex mechanism and as a way to reduce costs to consumers, but we worry that they are too large and might undermine actual reductions. We don't want to achieve reductions in the electricity generating sector only by targeting other sectors.
- 2 Don't use BAU trajectory as basis for setting offsets ceiling. It's better if offsets are tied to the cap and we can set them from there.
- 3 Increase consumer allowance allocation to 50% instead of 25%. Cost impact would be negligible and beneficial to consumers.
- 4 Set cap at 15% reductions instead of 10% reductions.

Michael Bradley – Michael J. Bradley and Associates for the Northeast GHG Coalition

Our primary goal was to stimulate national action and serve as a model for other states. We've submitted comments and will go through some of these. I think looking at BAU is useful.

- 1 If compare cap to BAU SWG proposal is more like a 25% reduction. The RGGI region is already cleaner than the rest of country. It is 40% lower in carbon emission rates if you look at total energy, and 20% lower on fossil output. We're about 25% lower if you look at input.
- 2 It's a tough challenge for the states to come up with balanced approach that not only balances different stakeholders interests but also within states. Still needs tweaking.
- 3 We support the concept of two phases. We support the 2009 start date and 2015 stabilization. We'll need that time to put state regulations into effect and also to put programs and infrastructure in place. We should have the first program review after the compliance period in 2012 rather than waiting until 2015. This is groundbreaking undertaking; this hasn't been done anywhere. It's a regional program connected to a much larger market. Need to have measured approach and check in sooner.
- 4 We probably aren't going to see a safety valve or a circuit breaker in the MOU, but that's one example of something that should be considered - how well is the offset program working? Should the offset program be constrained and how much?

- 5 If reductions are real and quantifiable they should count. Restricting offsets will lead to higher prices, which will lead to even more leakage than what's already been modeled by IPM.
- 6 The set-asides are problematic. We don't understand what would actually happen with that 5% in terms of offsetting leakage. What would a project be under the Strategic Carbon Fund that wouldn't be covered elsewhere? We're not convinced it's going to work. Our coalition can't support a Public Benefit of 20%. There are different impacts on different players when there's a large set aside. Companies that operate a lot of natural gas will have to invest more and are really on the margin. This will be impact them harder.
- 7 40% lost through leakage is a huge net benefit lost, too much. When you take into account the leakage from PJM and Canada, it is between 40-45%. The entire region is going to pay 100% for the program and we may be setting ourselves up for getting only 60% of the benefit or less.
- 8 We suggest that a group of experts come together, arranged by SWG (quite a few in the room here have worked on this issue) along with the ISO's and other people that are really involved in power markets, and come back to the SWG with a proposal within six or eight months. We need to get this resolved before the programs are nailed down in detail in terms of state regulatory action. It's not going to be waterproof, there is risk of debate and legal action with all of RGGI, but that doesn't mean shouldn't do it. To lose 40% of the benefits because it's too hard to deal with isn't acceptable to our group. We'd like to participate in that process. All we ask is an acknowledgement that there will be an attempt in the MOU to deal with leakage.

Franz Litz, NY DEC

Could you please submit the info on how you calculated the 40% leakage issue in regard to PJM and Canada?

Michael J Bradley - Michael J. Bradley Associates

We'll be happy to submit that to you.

John Holsapple, NY Coalition

We are concerned about risks underlying the IPM modeling (the RPS penetration, the effectiveness the EE programs, nuclear re-licensing issues, gas and T&D infrastructure costs etc.) We still continue to worry about reliability, affordability and transferability to rest of nation. We will submit more detailed comments, but here are some bullet points on things we agree on:

- 1 Any auction part of program needs to be run well

- 2 Public benefit allocation should be less than 20%. It's a matter of risk. Makes sense to approach this more conservatively, get more experience and move forward.
- 3 Finish reliability study, air and vet it before the model rule, not after.
- 4 Off-ramps: move monitoring from 2015 to 2012.
- 5 Remove constraints on offsets. They should be embraced on a national basis and not restricted to the RGGI region
- 6 Emission leakage is an issue of major concern. SO_x, NO_x, and mercury emission data is coming. We have not seen those numbers, so we are having a difficult time on our own understanding the impacts of emissions leakage and we look forward to seeing those emissions data.
- 7 We do not see Carbon Fund as silver bullet. This falls far short. We hope something will be developed to control leakage, but at this point we are concerned about this.

Bill Prindle, ACEEE

Offsets and energy efficiency are both claimed to have virtue in reducing costs. Offsets are clearly needed for flexibility in the design of a cap and trade program. The question is, on the margin, what's the best tradeoff if you have to make choices between those two? Of course, being an efficiency advocate, I want to make the point that efficiency offers additional benefits to the RGGI program in its total goals. Both offsets and EE will help reduce leakage. Both will help reduce allowance prices or at least keep allowance prices down; however EE does a lot more, on the margin, for energy prices in the region. It does a lot more for total economic benefits, as the REMI modeling showed us.

Also, in terms of the supply costs for offsets, a lot of those tons don't get attractive until you're up above six, seven, ten dollars a ton, and we saw several scenarios where the allowance price never got above two or three dollars a ton. EE is available and cost-effective at ANY allowance price today, and will be for the next twenty years. Other offsets don't help until you get into huge tonnage. The problem is, if it can't be hardwired into the cap it's going to take this extra policy commitment on the margin to make it happen.

In the interest of full disclosure, I should acknowledge that one form of EE is an offset, and that's natural gas and oil savings. NYSERDA is currently conducting study of natural gas EE potential similar to an electricity efficiency study they did three years ago, which was the basis for a lot of the EE data we characterized for IPM. So, when it comes time to quantifying the offset value of gas savings, that data will be there for you. 70% to

90% of natural gas savings are obtained through electricity end-use savings. Although it is more difficult to wire directly into cap design, EE offers a broader set of total benefits to the RGGI program.

Kevin Conroy, The New England Council

Our members are concerned about the price of electricity being 52% higher in New England than in rest of the country and also about reliability. ISO has talked about blackouts in the northeast being very likely by 2008 if more generating units are not added here. Climate change is something our members are very concerned about.

- 1 We prefer a national plan, not regional plan.
- 2 We are concerned about this proposal. We have some deep concerns about the inputs in that modeling. (See Nuclear Energy Institute and Charles River Associates studies on RGGI website that talk about much deeper impacts to the economy of the New England region and the Northeast than what the modeling here shows,).
- 3 We are deeply concerned that only three, four, or five states will adopt this. Something in the proposal should state that has to be adopted by at least seven states, or at least by a large percentage of the emissions in the region. The value of this program is that it's a regional approach, not a state by state approach.
- 4 Need flexible offsets in order to keep the price of electricity down in the Northeast. It should not be limited to the RGGI region. We are concerned also about the 50% limit too.
- 5 We want a circuit breaker or safety valve in the proposal, which would also be an important mechanism to keep the price of electricity down.

Sara Wade, Environmental Defense

We are deep in discussions and will have final comments in the next few days. I want to relay the message from Fred Krupp that ED sees this program as very important and they would like to do what they can do to make sure some part of it moves forward. They do see a lot of potential here to be national model. They see this as an important first step in addressing global climate change. In general, ED is quite supportive of where things are. They also have a few tweaks they'd like to see as well and we will submit those shortly.

Ben Feldman, Natsource

- 1 Restricting offsets conflicts, at least conceptually, with the idea of least cost and a flexible program. We shouldn't construe offsets as somehow not being reductions from the electric utility sector. If the electricity sector is the only sector living under the cap and they use offsets, I'm not sure that the logic holds

that these offsets are not reductions from the electricity sector. These offsets occur because the covered sources in the electricity sector pay for them. If offsets are the most cost-effective means of achieving the required reductions, such use should not be unduly restricted if the objective is a least-cost program.

- 2 On the 20% public benefits allocation: it's analogous to when a kid comes to my door and asks me to buy candy bars to ensure her school can continue to offer music class. I buy the candy bar thinking music classes sure are important but what a bad way to fund a program, the kid doesn't need candy bars, or to spend time selling them, she needs music classes. In the 20% allocation, entities that do not need an allocation are given allowances so that they can sell them to get what they actually need. If the allocations are given to ratepayers in a non-discriminatory manner the proceeds from selling the allowances could be used to alleviate price increases and perhaps that makes sense. However, if the allocation is given to Energy Efficiency providers (ESCOs, Gov't agencies, etc.) it is hard to know if the benefits of this allocation are going to be equitably distributed amongst ratepayers, so there's a real question there. It is true, however that all ratepayers would benefit to some extent, from the reduced cost of wholesale power because EE brings you down on the curve.
- 3 As a corollary to that, EE certainly pleases the Volvo crowd and it is good. It's also cost effective now but not being taken up. It's a classic market failure and the question is whether or not providing additional subsidies to EE is a good way to address this market failure and reduce the cost the RGGI program will impose on consumers. The very fact that the program raises wholesale power prices means that EE measures are becoming more economically attractive. If EE providers are also provided with allocations they are receiving a second benefit from the program. I don't diminish the need for EE and the role that it can play, but an allocation to EE providers raises same type of windfall profits concern that has been expressed with respect to non-emitting generation. It happens to be a different activity and it's favored, so perhaps it's not viewed through the same lens but the fundamentals are identical
- 4 I'm confused about the Carbon Fund. How or what assurance is there that the pool of revenue will be efficiently allocated to the most cost-effective reductions? Those are my comments on Slide II.

Seth Kaplan, Conservation Law Foundation:

We need to foster systemic efficiency as a long-term solution. Not just as something that's incidental. For the public record, the only Charles River analysis on the RGGI website is a totally different animal than the SWG proposal. It's based on command and control. We need to stay within the world we're talking about here. Relying on analysis of totally different mechanisms to criticize this program is not useful.

Judi Greenwald, Pew

Strategic Carbon Fund is intriguing, but we need more specific concrete examples. My sense is a lot of people are reacting negatively because they don't understand it. With more definition this piece could be used to foster innovation.

Chris Sherry, NJ DEP

Some similar models are:

- 1 The Climate Trust which was originally set up in Oregon to help meet their standard for offsetting a portion of CO₂ emissions from new power plants sited in the state. They've also been working to procure emissions reductions for other states and utilities across the U.S.
- 2 Another model is the Prototype Carbon Fund and some other funds that have been set up to procure CDM credits for various nations that are subject to the Kyoto Protocol. So there is a working model for this; it's not something we just pulled out of the air.

Dr. Raab then invited the audience to provide comments:

John Cusack, Environmental Business Associates of NY State

I represent a trade association of 140 members. The financial industry has to be more involved in the design of RGGI. Financial institutions should get involved to create a market hedge. The oil and gas assumptions are not very good. Offset will have high hurdle. The verification process is hard. If someone sells you credit for delivery in 2008, how do you know the credit will be there then? The financial world can guarantee these things. The trading system and reporting and verification system will have to be designed with transparency so that investors will be able to understand what those risks and opportunities are. Getting the financial world involved will help make it a more workable process.

Mary Quillian, Nuclear Energy Institute

- 1 We want to see equal treatment of all non-emitting technologies. Highlighting any one of these technologies, but not talking about nuclear energy (which is the largest source in the area) is not honest.
- 2 We should put increased nuclear energy in the definition.
- 3 Change the term "renewable" to "non-emitting" throughout the language of this proposal. The goal should be to reduce greenhouse gas emissions.

Ann Ingerson, Wilderness Society

- 1 Offsets need to be limited in quantity and should have to be of very high quality because it's important to build credibility for offsets among the general public and among the people in this room.
- 2 Permanent forest protection should be considered by the SWG as a possible acceptable offset along with sustainable forest management and afforestation. Over the next few decades over 20 million tons of CO₂ will be emitted per year due to destruction of forests in the Northeast. That's a source of carbon just like emissions from utility plants.
- 3 The verification issues around protecting existing forests are not that much more complex than the verification issues around afforestation. The advantage of protecting existing forests over afforestation is that it is more widely applicable in our region and it produces a range of co-benefits that can help fund offsets from that source.

Mark Breslow, Mass Climate Action Network

Reason we are here today is that global warming is a massive threat to the entire earth. Europe is ten years ahead of us. We are going to need an eventual 80% reduction of all sources.

- 1 This program is very modest. It is spread out over 15 years, for one sector only.
- 2 The costs of this program are very small, except maybe to coal operators. Just like there were costs for fluorocarbons, we can't expect emitters of carbon not to pay some cost or we will never get anywhere.
- 3 This program needs to go forward and it needs to be bigger than it is if we are to do what we came here to do.

Ed Osan, Healthy Air Coalition of Maryland

We want to commend the SWG and all the states that are full participants in the program. Many in Maryland hope our state will be a full participant soon. Our recommendations:

- 1 Don't inflate baseline. Current emissions should be current emissions.
- 2 Competitive pressure can encourage least cost solutions, and EE, which is a low cost solution to carbon avoidance.
- 3 You need to take on leakage more directly than the Strategic Carbon Fund does. Rich Cowart's proposal would address this more directly by simply requiring those who import power from outside the region to hold allowances. This is a

simple, fair and elegant solution to one of the key issues that people have been expressing a lot of concern about.

- 4 There are some conceptual and administrative issues to be worked out. Characterizing the carbon content of imported power can be a little tricky but you don't have to be 100% accurate on that to get the job done.

Jared Snyder, New York City Assistant Attorney General from Office of Mark Spitzer's

We commend the SWG's work and hope this will become a model for the nation.

- 1 We haven't talked about the need to balance the benefits of reducing greenhouse gas emissions. The enormous benefit of reducing those threats is what needs to be weighed against the costs of this program which can be minimized.
- 2 Under some ways of allocating the proceeds from allowance distribution, there could actually be no costs of this program to the economy as a whole. The consumers can benefit from efficiency improvements that will result from use of the public benefit fund.
- 3 You can structure this program with a tighter cap, a lower cap that provides greater benefits without significant harm to the public. We urge the SWG to consider a larger allocation to the public than 20%. This should be a part of the program as a whole and not something that is left to the states to decide because it is linked to the cap level.

Don Neal, Calpine Corporation

Calpine Corporation commands the most efficient fleet of fossil generating stations in the RGGI region. We commend the SWG for the amount of work and thought that was put into this and generally support it. We do have a few recommendations.

- 1 Eliminate the 20% EE set aside. We feel it is a tax imposed on fossil generators. It will increase the cost of the program implementation because we will pass the cost right through to consumers. There's been a lot of debate over whether people would pay for the allowances whether we were given them or not. The current method to fund EE is more efficient. Put it right on the electricity bills. The cost to consumers of the EE set aside will also be exacerbated by the fact that for every one dollar a fossil generator on the margin spends for an allowance, consumers are also going to pay a dollar to non-fossil generators that have no RGGI program costs. That doesn't seem very efficient. In addition, companies purchasing allowances like Calpine from the EE set aside pool will incur costs of capital and brokerage fees that will also be added to the bid price and probably be passed through to consumers in the form of increased wholesale electricity prices. And by the way the non-fossil generators

which also don't have those costs are also going to reap the benefits and consumers will pay them.

- 2 We were disappointed that the cap allocations to the states are not on output based allocations. Calpine feels that output based allocation is the way to reward efficiency in fossil generation, which we think CO₂ reduction is all about.

Julianne Zimmerman, Greenfuel, Inc.

I've been very impressed with the openness and transparency of the meetings in this process. Opening big picture core questions to the group at this stage is very important. On question three I'd like to acknowledge that right now there are no point of emission control mechanisms. I represent a company that is bringing one of those mechanisms to market. The SWG should make sure as the rules are defined, to create an open and flexible mechanism to incorporate new technologies that reduce emission at fossil generation. Technologies will come into the marketplace. RGGI should enable the regulated entities to take these up as quickly as possible as they come on board.

Lars Kvalle, Center for Resource Solutions

We are a nonprofit organization that certifies voluntary renewable energy programs across the nation.

- 1 We want to make sure the SWG will think about the effects on the renewable energy market specifically the voluntary market. We have submitted comments we hope you will consider closer. There are some fairly technical solutions on how you can approach that so you don't basically eliminate that part of the voluntary energy market from the rest of the nation.
- 2 We think output allocation is the best way to address that and, in that way, would actually agree with NEI that all non-emitting sources should be treated equally. However, we do think there are reasons why nuclear would not be in public benefit fund and why renewables would be.

Eric Holdsworth, Edison Electrical Institute

We commend the SWG for having such a public process and allowing others to observe. In regard to question three on how to ensure successful implementation we have a few thoughts.

- 1 Make the detailed modeling results available to the public so those effected entities can look at a fixed target and give feedback.
- 2 The primary focus of SWG and the RGGI process should be how to serve as a national model. Certainly a program that stands to lead to increased leakage or

perhaps a tenfold increase in electricity prices is not going to serve well as a national model.

- 3 Start your future modeling and start your results by looking and basing everything on the high emissions case as a worst case scenario. Many of us feel that even that contains a bit of optimism in it. You could improve your program over time, but you will have factored in the higher emissions case.
- 4 Don't set too restrictive a cap. It doesn't matter to the atmosphere where the carbon comes from. Program should not punish generators in region, which are among cleanest in the nation as opposed to electricity coming from outside the region.
- 5 We oppose restrictions on offsets and we oppose the 25% public benefits set-asides.
- 6 Need credits in market or won't be any trading. Have to have a supply to meet the demand. If consumers receive all the allowances, it would increase administrative costs. Sometimes revenue doesn't even go to climate change reductions but to offset state budget deficits.

Radmila Miletech, IPPNY

IPPNY will be submitting comments.

- 7 Look at full spectrum of possible program costs including modeling the upper end of possible costs that would be reflected by the highest emissions case dealing with much higher gas prices and much more flexibility about what kind of technologies can be built within the region.
- 8 We look forward to seeing more details about the economic results for the energy modeling so we can really get the full picture of what the potential costs and benefits might be.

Ken Pokalsky, Business Council of NY State

- 1 The consumer sector, the industrial sector and commercial companies I represent are really concerned about the potential risks inherent in this proposal. The average delivered price to industrial consumers in NY State is about 6 cents per kilowatt hour right now. Competitors in other states pay far less. The cost of electric power is of grave concern to us. If this program goes awry and the market doesn't work the way you think and gas prices aren't stable like you think, and we have to wait until 2015 to look at a program correction, we're going to lose a significant share of the remaining manufacturing in NY State.

- 2 A lot of the assumptions in modeling are based on stable gas prices or even reductions of gas prices. We have significant doubts about natural gas prices going down
- 3 The concept of a circuit breaker based on price, maybe on the price of allowances is the most important one to us. That circuit breaker need only apply to the one aspect of the RGGI program - the allowances trading program. EE can continue to go forward, as this area is far more certain. Incorporation of that circuit breaker is one of the most essential things SWG can include in its recommendation to the Agency heads next week.

VII. Next Steps

Sonia Hamel, MA OCD

The SWG would like to express what a pleasure it's been to work with you and our appreciation for the kind of feedback that we've gotten from you. You've been very generous with your knowledge and with your own specific concerns. I know I've learned a lot from your points of view at all of the meetings we've had.

We have a meeting next week with Agency heads in Providence, so we'll be bringing back your written comments on the model rule. We will be doing a synopsis of your comments, looking for areas of commonality and delivering that information back. I know a lot of you have been meeting individually with different state agency heads or staff working group members and so that information will continue to get fed into the process.

We're about to step into a different phase of the process, the model rule. The commentary will be best on paper. We are also open to doing state-by-state rolling model rule review sessions for those whom would like to do it.

We'd like to provide follow up on details of modeling and REMI analysis that was presented here today. We'd like to offer to you another phone call or maybe a couple of phone calls if it's needed, on the rest of the REMI analysis to look at what you saw today and to get into the numbers. We'd like feedback on whether you think that 's helpful to set up a call in the next few weeks.

We have been very much appreciative of the work Jonathan has done in organizing and holding these sessions, which have been really helpful to us, and most especially to the Resource Panelists who've been here. All of them deserve a lot of gratitude from us, the SWG. It's felt like you've got our back. The ISO's have been incredibly helpful in making sure we're looking at this the way that they do. Joe Kruger and Judi Greenwald especially, and Jonathan Pershing who's taken on the thankless job of working with the Agency heads to reach resolution. All of you have been really helpful; NESCAUM has also been extremely helpful.

We'd like to hear what you think and what you need next. Would you like to have modeling calls on the REMI work, and are there other things you might still want to discuss?

Larry DeWitt, Pace Law Center

- 1 Anything you can do to help us understand the REMI modeling is helpful. The modeling calls last month were wonderfully helpful.
- 2 Just in terms of future process I think that maybe these generic meetings have limited value and it would be better to have more informal meetings with direct input to the SWG rather than regional meetings that require a lot of production and energy.

Sonia Hamel, MA OCD

I just wanted to say that the website will continue to be maintained and new data will be up in next few days.

Chris Sherry, NJ DEP

Hopefully it will be up by the end of the week. There are some revisions to the IPM tabular data reports. There weren't any substantive changes, just in terms of formatting.

Mary Quillian, NEI

I know the website is a thankless job, so thanks to Chris for doing that, but I agree with Larry that one on one is a better use of our time but we all benefit from seeing each other's comments. There has been some frustration, especially in the last three or four weeks, and I know you guys have been incredibly busy, but it's unclear who we need to be sending comments to. Do we send the comments to Chris and he posts them? The place to put comments on the website is confusing. How do we get our comments on the website? So especially if we are moving away from these meetings, we need an efficient way to communicate our comments.

Franz Litz, NY DEC

The fastest way is to send it directly to Chris, or if it's addressed to one of the other states, copy it to Chris and make sure that it's clear that you want it posted on the website. We set the rule at the beginning that if you want something posted on the website you need to specifically ask that it be put on the website.

Sonia Hamel, MA OCD

We've all been seeing your comments on the SWG proposal, but getting them up on the website so you all can see them is the piece that's been missing. So thanks for telling us and we'll do better. But do include a note with your comments that they need to go up on the website because we're getting an unbelievable volume of comments

Radmila Miletech, IPPNY

I just had a process suggestion, too. If we are going to be moving away from regional meetings, I just want to encourage the kind of contact we've had in NY, which has been really valuable. The NY stakeholder process parallel to this process has been really engaging and we get to a lot of issues that are important for New Yorkers. So for example, as we get more information on the REMI economic modeling, it would be very good to have the discussion in NY about what that would mean, especially when you look at the highest emission case and what that will mean for NY. And then as you move to the cost-benefit analysis, reliability and the discussions about how the model rule and the MOU are being shaped, IPPNY especially really values this process, so if you can keep that going, that would be great. Maybe you've spoiled us Franz, because the free flow of dialogue in NY has been really helpful.

Ron Drewnowski,

From the comments it seems people are tired of these regional meetings and I realize they are a lot of work, but I find there is a lot of value in them and they should be continued. Don't totally eliminate them.

Seth Kaplan, CLF

We need to reach out further to engage a broader public circle at all sectors of the economy.

Franz Litz, NY DEC

We don't have to decide not to have another meeting. Maybe next time we meet as a group should be when we have the draft model rule. You can also approach one of us to convene a meeting if you feel something needs to be on the table. Also, we pay Jonathan to do this work and we had to pay for this room – well not us – but NESCAUM, which is another reason we are looking at going to a more informal process

Sonia Hamel, MA OCD

The room space was supported by NESCAUM through grants from Pew, NJBPU, MA Renewable Energy Trust, Kendall, SERDA and others. We are grateful for their generous support.

The meeting was adjourned at 4:00.

RGGI Stakeholder Meeting #9
September 21, 2005
Attendance List

Affiliation	Name	5/20/04	6/24/04	9/13/04	11/12/04	2/16/05	4/6/05	5/19/05	9/21/05
Stakeholder Group									
ACEEE	Bill Prindle	X	X	X	X		X	X	X
AES	Mark Buzel	X	X	X	X	X	X	X	X
AES	Chris Wentlent								X
CLF	Seth Kaplan	X		X	X	X	X	X	X
CLF	Susan Reid								X
Constellation	John Quinn	X	X	X	X	X	X	X	X
Constellation	Margaret Huson								X
Dominion	Dan Weekley	X	X	X	X			X	X
Dominion	Lenny Dupuis	X	X	X		X	X	X	X
Dom.Energy NE	Paula Hamel			X	X	X	X	X	X
EDF	Jessica Holliday	X		X	X	X	X	X	
EDF	Sara Wade								X
EDF	Jim Marston								X
Entergy	Brent Dorsey	X		X	X	X		X	
Entergy	Jeff Williams		X						
Entergy	Jack Alexander						X	X	X
Entergy	Steve Melancon						X		
Environ. NE	Dan Sosland							X	
Environ. NE	Derek Murrow	X	X	X	X	X	X		X
Environ. NE	Jessie Stratton								X
Environ. NE	Heather Kaplan				X	X	X		
Environ. NE	Sam Krasnow								X
IEP of NJ	Steve Gabel		X	X					X
IEP of NJ	Mally Becker	X							
Int'l Paper	Doug Stilwell								
Int'l Paper	Karen B Risse	X	X	X	X	X	X	X	X
Keyspan	Bob Teetz	X	X	X	X	X		X	
Keyspan	Cathy Waxman	X	X	X	X	X	X	X	X
ME Public Adv.	Steve Ward	X	X	X		X	X		
NEGT	Susan Flash		X						
NGRID	Joe Kwasnik	X	X	X	X	X	X		X
NGRID	Carol White						X	X	
NGRID	Timothy Stout								
NEGHG Coalit..	Michael Bradley	X		X	X	X	X	X	X
NEGHG Coalit.	Brian Jones	X	X	X	X	X	X	X	X
NRDC	Dale Bryk	X	X	X	X			X	
NRDC	Luis Martinez	X			X	X	X	X	X
Northeast Utilities	Jon Russell	X	X	X	X	X	X	X	X
NY Coalition	John Holsapple	X	X	X	X	X	X	X	X
NY Coalition	Sandra Meier	X	X				X		X
PA Consumer Advocate	Sonny Popowsky		X	X		X	X		X
Pace Law Ctr.	Larry De Witt	X	X	X	X	X	X	X	X
PIRG	Rob Sargent	X	X	X			X	X	X

PIRG	Frank Gorke					X			X
PIRG	Evan Feinman								X
PSEG	Ron Drewnowski	X	X	X		X	X	X	X
PSEG	Christine Neely	X		X	X				
PSEG	James Hough		X						
PSEG	Dan Cunningham								X
The NE Council	Deirdre Savage	X	X	X	X				
The NE Council	Kevin Conroy						X	X	X
UCS	Deb Donovan	X		X		X			X
UCS	Michelle Manion	X	X	X	X	X	X	X	X
UTC	Chris Powell	X		X	X	X	X	X	

Affiliation	Name	5/20/04	6/24/04	9/13/04	11/12/04	2/16/05	4/06/05	5/19/05	9/21/05
Resource Panel									
ISO-NE	Mark Babula								
ISO-NE	Jim Platts		X	X	X		X	X	X
NatSource	Rich. Rosenzweig								
NatSource	Ben Feldman		X	X		X	X	X	X
NatSource	Michael Intrator				X				
independent	Ken Colburn			X		X		X	
NESCAUM	Suzanne Watson	X	X	X	X				
NESCAUM	Kelly Levin					X	X		
NESCAUM	Arthur Marin								X
NESCAUM	Heather Kaplan								X
NYISO	Dave Lawrence			X		X	X	X	X
NYISO	A. Breidenbaugh	X		X	X	X			
Pew Center	Sally Ericsson	X							
Pew Center	Judi Greenwald	X	X	X	X	X	X		X
Pew Charit. Trust	Lea Aeschliman					X	X	X	X
PJM	Susan Covino				X				
PJM	Kennet. Schuyler	X						X	
PJM	Joe Kerecman	X				X	X		X
RAP	Richard Cowart	X	X	X	X	X	X		X
RFF	Joe Kruger	X	X	X	X	X			X
WRI	Jonathan Pershing	X	X		X		X		X
WRI	Andrew Aulisi		X			X	X	X	
Facilitators/Consultants									
Raab Assoc.	Jonathan Raab	X	X	X	X	X	X	X	X
Raab Assoc.	Peter Wortsman	X	X	X	X		X		
Raab Assoc.	Susan Rivo	X	X	X		X	X	X	X
ICF	Steve Fine				X	X	X		X
ICF	Chris McCracken				X	X	X		X
EDR Group Inc.	Lisa Petraglia								X

Affiliation	Name	5/20/04	6/24/04	9/13/04	11/12/04	2/16/05	4/6/05	5/19/05	9/21/05
Staff Working Group									
CT DEP	Chris James		X		X				
CT DEP	Chris Nelson	X		X		X	X		X
CT DPUC	Michael Chowaniec					X			
DE DNREC	Phillip Cherry		X	X	X	X	X	X	X
DE DNREC	Valerie Gray					X			
DE PSC	Bruce Burcat				X				
DE PSC	Robert Howatt				X				
ECP	Bill Breckenridge				X	X			
MA DEP	Bill Lamkin			X		X	X	X	X
MA DEP	Nancy Seidman		X		X		X		X
MA DEP	David Shakespeare								X
MA DEP	Nicholas Bianco								X
MA DOER	Dwayne Breger	X	X	X	X	X	X	X	X
MA DTE	Meera Bhalotra						X	X	
MA DTE	Amy Barad						X		X
MA DTE	Marilyn Ross							X	
MA OCD	Sonia Hamel	X	X	X	X	X	X		X
MD-DOE	Gene Higa	X	X	X	X	X		X	X
MD-Energy Admin	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								
NH DES	Andy Bodnarik								
NH DES	Joe Fontaine		X	X			X	X	X
NH PUC	Maureen Sirois								X
NJ BPU	Michael Winka								
NH PSB	David Farnsworth			X			X		
NJ DEP	Chris Sherry	X	X	X	X	X	X	X	X
NJ DEP	Joe Carpenter								
NJ DEP	Jeanne Herb								
NJ DEP	Sam Wolfe								
NY DEC	Franz Litz	X	X	X	X	X	X	X	X
NYC DEC	Jeffrey Mapes					X	X		
NY DEC	Michael Sheehan	X		X	X	X	X		X
NY DEC	Thomas McGuire	X	X	X		X			
NY DEC	Lois New	X	X	X	X	X	X	X	X
NY DEC	Mark Lowery	X		X	X	X			X
NY DEC	Jason Denham		X			X			
NY PSC/DPS	John D'Aloia	X	X	X	X	X	X		X
NY PSC/DPS	Steve Keller								X
NY PS/ DPS	Tina Palmero				X	X	X		
NYSERDA	Karl Michael	X	X	X	X	X	X		

NYSERDA	Dave Coup					X	X		
PA DEP	Joe Sherrick	X	X			X	X	X	X
PA DEP	Don Brown				X				
RI DEM	Steve Majkut	X					X		
VT DEC	Dick Valentinetti			X					X

Name	Affiliation	2/16/05	4/6/05	5/19/05	9/21/05
Observers					
Angoorly, Caroline	NRG	X			
Ariaza, Joe	Reliant Energy		X		
Ashford, Michael S.	The Climate Trust	X			
Asteriadis, Sakis	NEPOOL GIS Program Manager	X			
Austin, Frank	Stone & Webster	X	X		
Baillie, Alison	Tellus Institute		X		
Baltera, Victor	Sullivan & Worcester LLP		X	X	X
Beal, Lisa	INGAA	X		X	
Bergey, Joy	Penn Future		X	X	X
Beaudin, Bernie	Cogentrix		X		
Begin, Kelley	Woodard & Curran, Inc				X
Berry, Don	McDermott, Will and Emery			X	
Blankenship, Julia	Cinergy Services				
Bluestein, Joel	EEA	X			
Borska, Diane	The Borska Group			X	
Boyle, Meg	The Climate Campaign				X
Breslow, Marc	Mass Climate Action Network		X	X	X
Burtraw, Dallas	Resources for the Future	X	X		
Bushinsky, Josh	Pew Center			X	
Butler, Bill	MIRANT			X	X
Buttazzoni, Marco	Environmental Resources Trust		X		X
Capstick, Bob	Joyce & Joyce, Inc.				X
Carthey, Debby	Mass Power/Cogentrix			X	
Chattopadhyay, Amit	Malcolm Pirnie Inc.	X	X	X	
Chestone, Alissa	Access Industries	X			
Conway, Caroline	MTC	X			
Cookson, Craig					X
Coyne, Martin	Platts Publishing		X	X	X
Clark, Sean	The Climate Trust	X	X		
Crookshank, Steve	American Petroleum Institute	X		X	X
Cummings, Fran	Renewable Energy Trust			X	
Cummings, Paul	Harvard grad student		X		
Cunningham, Bill	Unions for Jobs and the Environment		X	X	
Cunningham, Dan	PSEG	X		X	
Cusack, John	Gifford Park Associates	X	X	X	X
DeCourcy, Matt	Levitan & Associates	X		X	
Davis, Stacey	CCAP				X
Di Cristofaro, Don	Blue Sky Environmental LLC				X
Dollois, Philippe	Global Energy Markets Deloitte & Touche		X		
Drucker, Cynthia	Drucker & Associates		X	X	
Eckersley, Olivia	IETA		X		
Edick, Stacie	CNY Resource Conservation & Development				
Embree, Sid	AtmosClear Climate Club				X
Evans, Randy	Infineum USA LD			X	
Ferraro, Frank	Wheelabrator Technologies				
Fontaine, Peter J.	Cozen O'Connor	X			
Finelli, Anton	CRMC	X			X
Gage, Laurie	Cantor Fitzgerald Environmental Brokerage		X		
Giles, Cynthia	CLF				X
Gorke, Frank	MASSPIRG	X		X	
Greer, Diane	NYC Apollo Alliance		X		

Grace, Bob	FPL Group	X		X	
Guski, Michael	Epsilon Associates				X
Gustin, Carl	Gustin ???		X	X	X
Gutrich, John	Dartmouth Enviro. Studies Program		X		
Guveyan, Steve	CT Petroleum Council				X
Hall, Michael			X		
Hampp, John	Sustainable Energy Advantage	X			
Hamrin, Jan	Center for Resource Solutions	X			
Hertzog, Mindi	Greenfuel Technologies			X	
Hoag, Ethan	Sierra Club	X			X
Holdsworth, Eric	EEI		X		X
Holtz-Kay, Jane	Author			X	
Heck, Werner	Heck Associates	X	X		
Ingerson, Ann	The Wilderness Society				X
Jabailly, Nicole	Appalachian Mountain. Club				X
Jacobson, Lisa	Bus. Council for Sustainable Energy	X			X
Jain, Regina	LaCapra Associates	X			
Jamiyo, Mark?	CH2M Hill (not sure of name)				
Johnston, Lucy	Synapse		X	X	X
Jolly, Carol	Energy Foundation				X
Jones, Sue	NRC Maine	X	X		X
Jope, Andrew	U of Vermont	X			
Joroff, Aladdine	Goodwin Proctor LLC				X
Karlic, Cynthia	NRG Energy, Inc.	X		X	
Kenny, Tom	Select Energy				X
Kilgore, Kedin	Natsource, LLC		X		
Krotzoff, Oleg	Con Edison of NY, Inc.	X		X	X
Koda, Richard	UWUA& IBEW	X			
Kogan, Lawrence	ITSSD			X	X
Koehler, Christa	City of Keane				
Kravett, Michael	ENSR International Inc.			X	
Kvalle, Lars	Ctr for Resource Solutions				X
Labrie, Mike	SHARE				X
Labrie,Paul	SHARE				X
Lane, Courtney	NEEP	X		X	X
Langlely, Diane	Clean Air & Energy Consulting		X	X	
Larson, John	TNC			X	
LeBlanc, Alice	Enviro. & Economic Consulting		X		
Lewis, Chip	CH2M Hill (not sure of name)	X	X	X	
Linky, Edward	USEPA Region II	X			
Lipka, George	Earthtech/EBI			X	X
Lundgren, Kim	Local Govts. for Sustainability				X
Machover, Bob	RJ Associates			X	X
Macy, Jordan	Univ of NH				
Maggiani, Bob	American National Power	X			X
Maillet, Bruce	Shaw E & I		X		X
Marzilli, James	MA House of Representatives	X			
Mason, Ashley	CSG	X		X	
Mernick, Mike	ICF Consulting		X		
Michals, Julie	NEEP	X			
Miletich, Radmila	IPPNY		X	X	X
Milkowski, Stefan	Columbia journalism student	X	X		
Moore, Robert	EANY	X			
Moore, Michael	Falcon ES	X			
Murdock, Sarah W.	Nature Conservancy	X		X	
Morrison, Brian	IEC			X	

Nagle, Kara	Headwaters		X		
Neal, Don	Calpine	X	X	X	X
Ogonowski, Matt	CCAP			X	X
Opton-Himmel, Jules	Yale student				X
O'Reilly, Jim	NEEP				X
Orel, Linda	The Nature Conservancy				X
Osann, Edward	Potomac Resources, Inc.				X
Pachovski, Slavi	ITSSD			X	
Palmer, Avery	Inside EPA			X	X
Parker, Charlie	Boston Carbon			X	
Pandher, Sandeep	IETA				X
Parker, Lisa	BP Emissions Markets Group	X	X		
Patterson, Alan	Interenviro				X
Paul, John	CEED	X			X
Peress, Jonathan	McLane Law Firm				X
Petraglia, Lisa	EDRG			X	
Pike, Dixon	Pierce Atwood			X	
Pokalsky, Ken	Bus. Council of NYS, Inc.				X
Proegler, Mark	BP Emissions Markets Group	X	X		
Quillian, Mary	Nuclear Energy Institute		X	X	X
Rabinowitz, Robert	Chicago Climate Exchange	X	X		
Rajan, Chella	Tellus Institute				X
Ramyar, Michael	British Consulate				X
Rau, Alexander	Carbon Management Group				X
Rawls, Tom	THR Associates. LLC	X			
Reid, Susan	CLF			X	
Rio, Robert	AIM	X			X
Roberts, Gail	Platts	X	X		
Ross, Marilyn	MA DTE EPB	X			
Rusch, Emily	NJPIRG		X		
Sandell, Layla	EPRI		X		X
Schneider, Ellen	Dept. Economic of Development				X
Schneider, Marcus	EF	X		X	X
Selin, Henrik	Boston University			X	
Shakespeare, David			X		
Shelley, Michael	Ecology & Environment		X		
Short, Bill	Ridgewood Power Management		X		X
Siegel, Joe	EPA		X		
Sinclair, Mark	British Consulate	X			X
Silman, Ruth	Nixon Peabody			X	
Silva, Patricio	Environmental Defense				X
Skernolis, Ed	Waste Management, Inc.		X	X	
Smallridge, Lynn	FPL Group	X		X	X
Smith, Arthur	NiSource, Inc.		X	X	X
Smith, Douglas	La Capra Associates			X	
Smith, James					X
Smith, Maureen	Center for Resource Solutions		X		
Smith-Galvin, Julie	Enel North America				
Snyder, Jared	NY Attorney General's Office				X
South, David	Technology & Market Solutions	X			

Space, William	Brown Univ.		X	X	
Spanger-Siegfried, Erika	UCS				X
Spencer, Greg	Blue Source	X	X		
Spinney, Peter	NEUCo	X			
Stackpole, Christine	Bus. Council Sustainable Energy			X	
Staaf, Erika	NH PIRG				
Stashak, Sarah	Mirant				X
Subler, Scott	Environmental Credit Corp.				X
Tahir, Tayeb	Calpine Corporation				X
Thakur, Joy	Suez Energy NA	X			
Thorpe, Jed	Clean Water Action		X		X
Tierney, Susan	Analysis Group		X		
Tilliston, Lynn	Public Service NH				X
Tranter, Laura	NRG Energy	X		X	X
Trisko, Eugene	UMWA	X			X
Tuffey, Thomas	PennFuture	X	X		
Van Atten, Christopher	MJB & A	X			
Vanderlan, Christine	Environmental Advocates of NY	X	X		
Van DeVeer, Stacy	University of New Hampshire			X	
VanVourhus, Chandler	C2I, LLC			X	
Wasserman, Carol	ESS Group				X
Wattle, Bruce	Ecology & Environment, Inc.				X
Weeks, Jennifer	Journalist			X	
Weiner, Scott	Rutgers	X	X		
Weiss, John	Industrial Economics, Inc.				X
Wilby, David	IEP of Maine		X		
Willard, Norman	EPA		X		
Wintergreen, Jay	First Environment Inc. Corporate HQ		X	X	
Wood, Susan	AgCert International Ltd.	X		X	
Wool, Sheldon	Boston Carbon			X	
Yang, Bunli	E4	X			X
Yost, Peter	PSEG Power		X		
Younger, Mark	Slater Consulting	X	X		
Yuen, Marion	MYA Group				X
Zimmerman, Julianne	GreenFuel Technologies	X	X		X