U.S. Department of Energy
Pre-Congestion Study Regional Workshops for the 2009 National Electric Congestion Study

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Transcript

David Meyer: Good morning, ladies and gentlemen. I'm David Meyer from the Department of Energy, and I welcome you to our workshop for our upcoming 2009 Electric Transmission Congestion Study.

Before I give you an overview of what we have in mind for the study I wanted to first thank Commissioner Don Downes from Connecticut for hosting us here. We're very glad to have the opportunity to be here. I also wanted to introduce some of my colleagues - Lot Cooke, from our general counsel's office, will be assisting us in the conduct of the study, has also two colleagues from the Department of Energy, from my office - Elizabeth Mortenson, I guess she's out at the front desk still, and Elliott Nethercutt, who's sitting back here in the back, helping with some of the other production work here.

And also Lauren Giles is here. Lauren is from Energetics Incorporated, and Energetics has been helping us stage these workshops, so we appreciate all of their contributions.

I also want to say that we have three more upcoming workshops, and one of them, in Atlanta, that meeting was initially scheduled for July 24th, but we found that it conflicted with a NARUC meeting, so at the request of some of the NARUC people, we've rescheduled that meeting for July 29, and so we wanted to be sure that there's plenty of notice about that change.

So let me turn now for our plan for the 2009 study. The first --the Energy Policy Act of 2005 tells us to do a transition congestion study every three years. The first study was due in August of 2006, and so we are now engaged in the preparation of the second study, and we plan to bring that out in August of next year. So, we are hosting these six regional workshops to tell people what kinds of information we're looking for and what kinds of data we're looking for, get their views on what they think would make this study particularly useful.

And in addition to these workshops, we are taking the opportunity of being up here in these regional cities to meet with states on a bilateral basis, if they request. Or, for that matter, meet with other organizations if they wish to discuss things with us directly.

And we will, of course, schedule similar meetings later in Washington. Again, if people wish to meet with us, we're happy to do that. We have an open door policy throughout the preparation of the study.

Let me turn now to the relationship between the congestion study and national corridors, because I'm sure that is something that everyone is concerned about.

The Act authorizes but does not require DOE to designate national corridors. And so this series of workshops is focused only on the 2009 Congestion Study. It does not have any bearing on the national corridors designated last October or on any possible national corridors that might be designed in the future.

So, we particularly want to ask the people what publicly available data should we be collecting and how should we interpret that data? What conclusions or character should we ascribe to that data?

And in some parts of the country there is a problem about contractual limits on the use of transmission capacity. And so you have the possibility of not only technical limits that affect the amount of line loading that you can put on those lines, but also the possibility that the line may not be loaded up to its limits, because of contractual commitments the full amount of that transmission capacity may not be available.

The 2009 study will focus only on recent or current congestion and, as we did in 2006, we will review the two interconnections separately. We will try to use the same concepts where applicable, but there are some important differences between the East and the West that will preclude total consistency.

For the West, we will work with a group under the auspices of WECC, the Western Electric Coordinating Council, a group called TEPCC that handles their transmission expansion planning. And we will work with them to review recent transmission plans from that area and also review recent congestion-related data. And then in the East, as we did in 2006, we will engage a consultant that will help us with the collection and interpretation of that data.

So, today we will have two panels, one a policy-oriented panel, and then another one that's a more technical-oriented panel. And I'm going to ask each of the panelists to make a short introductory statement, and then we'll turn to more specific questions and I will try to engage the panelists in discussion amongst each other.

There will be an opportunity at the close of the workshop for other parties, non-panelists to make statements, and I urge everyone to submit written materials to us, because that gives you the opportunity to present material at whatever length you wish. All such written materials will be given equal and full consideration. And I think the written materials are in the end going to be more important than what actually transpires at these workshops. These workshops are intended to launch an ongoing conversation, and so the workshop isn't by any means kind of the end of the chapter.

So, with that, let me say that in the 2006 study we identified several parts of the country as areas of concern from a congestion perspective. And we invite the panelists and others to, as it were, bring us up-to-date on what's happened in your neighborhood pertaining to congestion. And since 2005, if you like, or if you wanted to go back further in time and talk about trends, maybe since 2002 up through 2007.

And, finally, are there particular areas that have emerged as areas that you're concerned about that were not apparent in, say, 2005?

Our schedule. We would like to receive as much material as possible by October 15, and about that time we will start trying to -- we'll be digesting these materials over the summer, of course. But after mid-October we'll start trying to figure out, well, what's the story that seems to emerge from this material? The window won't close on October 15

because we realize the relevant material will continue to become available, but nevertheless we want to try to stay ahead of that flow to the extent we can.

January to March, we will be very much in the mode of developing kind of the basic skeleton of our report. April-May, we will be doing the actual writing. June-July we'll be in the process of internal review and preparation of a publication text. So, then we issue the document in August for comment and welcome your reactions then, too.

Oh, there is some information here about a process for submitting written comments to DOE. We certainly encourage everyone to submit their materials electronically. Anything that comes in as hard copy gets -- frankly, it gets baked through a security screening process. And some of that material does not survive the baking process that well. So, I encourage everyone to submit their material electronically.

So, if you have further suggestions or comments, please let me know. You can talk with me here or contact me through the contact list. Thank you. We'll get started with the panel.

Donald Downes: Do you want us to just begin in the order shown? If you want me to play, just tell me the rules.

David Meyer: Okay. One request, again, for the benefit of the people on the webcast. I ask each of you to introduce yourselves, not just initially, but as we go into dialogue each time you have to, so that the people who are just listening to audio-only have a clear sense of who is speaking. Yes, so with that, Commissioner Downes, would you get us started, please.

Donald Downes: Sure. Well, thank you all for coming to Hartford. I'd like to thank FERC for running the workshop. It's a great opportunity for us to talk to you a little bit on a practical level about how these work.

I want to recognize the Chairman of the NARUC Electricity Committee, Anne George, who frankly is much more familiar to me as my friend and colleague as a member of the Connecticut Commission. She was personally responsible for this venue and so forth, and I and my gasoline credit cards thank her for that.

I also appreciate the fact that I wasn't allowed to do a PowerPoint. It confirmed to me again that I actually am intellectually capable of developing a talk without slides.

I'm going to try and talk to you a little bit today about both regional and local things here. I'm going to try and talk to you a little bit about what Connecticut in particular has done, but I want to point out going in, you will hear later on from our friends from the Commonwealth and, with any luck at all, my friend Lisa Fink appears from the great state of Maine, you will discover that they have some slightly different emphasis on things.

But as a general proposition, all the states in New England have recognized the need to deal with the problems that confront us over time. And I generally point out that the saga of line cap, as painful as that may be for many of us and as indelibly written as it may have been, ultimately demonstrates that a resolution was possible. Over 90% of the players ultimately subscribed to the Forward Capacity Market. And that's frankly -- I came from the Legislature, and 90% majorities are hard to achieve.

On a broad level, Connecticut had certain, very basic challenges facing us when we started this about 10 years ago or so. We had issues of transmission. These went to

congestion, primarily, but also the ability to just move power around within the state of Connecticut. And I'm going to talk to you more carefully about those issues in a minute.

But the other two actually fit together with this as well. One of them is capacity. We were short on capacity as a general proposition and short of the right kinds of capacity to meet load and particularly in specific geographic locations. And so dealing with congestion was going to require addressing it through those means as well.

And, finally, import capability. This is the one that I've kind of run out of time on before I got a chance to fix it, but I'm partway down the road. The news project, which covers part of Massachusetts, Connecticut and Rhode Island, is currently in front of a variety of authorities, and that's the piece that would go to substantial improvement in our import capability.

Let me talk to you a little more carefully specifically about congestion, specifically about the kinds of solutions we try to employ here. We started off with Connecticut as a whole being in trouble, and southwest Connecticut being one of the 10 worst congestion areas in the country. It was apparent that we were going to need to address this on a variety of different levels.

To give you a sense of perspective as I kind of walk through these numbers quickly, keep in mind that we started the game with around 6600 or so megawatts install capacity. And today we probably are looking at, and I'm looking at my friend, Mr. Rourke, to see if I'm even in the ballpark. I expect that we will see peaks in the range of, say, 7,000 to 7,200 or so over this and the next succeeding season or two, with any luck at all.

So, we looked at a variety of solutions. First solution, and perhaps most important in certain ways, was improving of the transmission facilities, and to that end, the distribution companies stepped up to the plate and proposed what we refer to as the two Fairfield County transmission fixes, Phases I and II, known in the business as the Norwalk to Bethel line and the Norwalk to Middletown line. As an adjunct to those projects, the Lynbrook cables completed part of the puzzle here, connecting a little bit further southwest. And again, also, two cables that directly link to our enterprise and across the interface with New York State, namely the 1385 cable and the cross-island cable. Together, these assets represent a value of approximately 2,580 megawatts of additional capability here. Keep in mind the original numbers.

On the demand side, we lead the nation in these areas, but recent studies showed that California, Vermont and Connecticut were in effect tied on this. But our friends in the Commonwealth are very hot on our tail here, and their new energy bill is going to drive more demand side stuff. And I full expect that as we move forward we will see the same phenomenon in other New England states as their energy plans and their policy directives seem to suggest.

We have, between demand side projects that we solicited through RFPs, through the Energy Independence Act, institutionalized programs that we run on a consistent, ongoing basis by means of a conservation and load management fund, which is supported by a ubiquitous charge on customers' bills, and the ISO New England Demand Response Program, which interfaces with a number of our programs for customer side DG and similar kinds of activities. There's approximately 1,000 megawatts of additional demand side strategy.

I should go -- well, I'll go next to generation, and there are kind of two categories here. One category is what I'll call traditional Central Site Generation. And so into this

category we have assets that were bought through the Energy Independence Act, again through an RFP process.

Project 100, which was 100 megawatts of additional renewables, which rapidly became Project 125, which became Project 150. We're currently at 125, and if Anne can tear herself away from here, she'll go back and get us another 25 real shortly.

And, finally, an act of the 2007 session of the Connecticut General Assembly, which called for the development some additional peaking units. This goes to the mismatch of load and assets. Together, those assets represent another 1580 megawatts of additional generation capacity.

And, finally, and the biggest surprise of all, at least to me anyway, was the development of customer side distributed generation. This was supported through a combination of incentives, a partial grant for the capital cost, a discount on the cost of the gas used as fuel, and low-cost financing. And we're now 23 months down range on this and we have a little over 600 megawatts of these assets that are approved and are in the process of being implemented.

So, are the strategies working? I would suggest to you that they clearly are. Not only because I said so, but also because there is actually some independent evidence that I think goes to this. Forward Capacity Market was substantially over-subscribed. I don't have the numbers in my head anymore, but we had interest at very high levels a couple of times, what we really needed in terms of assets.

The auction was closely contested. There were enough assets in the auction that the price of the Forward Capacity Market was pinned at the floor. And maybe most important from Connecticut's point of view, in particular, was that it showed in effect no price separation, a clear and independent operational piece of evidence that in fact those strategies were working.

This over-subscription phenomenon is not limited there. The peaking generation docket that we ran yielded several times as much generation as we needed. The Energy Independence Act enacted by the Connecticut General Assembly consistently was over-subscribed in both Phases 1 and 2.

As we look out on a broader basis, we now see the next great challenges coming and transmission projects far from being hard to come by are proliferating. I have had a number of visitors to my office to talk to me about various plans they have for wanting to build very substantial facilities, facilities valued in the billions of dollars for the purpose of importing power from renewable sources both in New England and in Canada. And to me this is another clear evidence that the market is alive and well and working fine, thank you very much.

Demand-side strategies, again going back to the Forward Capacity Market for a second, we saw a huge surge in demand-side strategies. In fact, our friends in ISO New England, I think, are now at the point where I think they would like to pause a little bit and consider the ramifications of the injections of large numbers of demand response and similar strategies into the operational side of the business. And I'm not suggesting that there is any problem here, but I think everybody feels that it's important to understand what the operational limits are and at least proceed into this with some degree of caution and care. The point again being that the demand-side strategies are proliferating.

And, finally, just in terms of the most raw, basic kind of an indicator, our consumption growth is in fact stabilizing or in fact declining, not to the degree that we might wish in

some ways, although the effects of the number of strategies that I've discussed with you take considerable time to take effect.

So, let me close out by suggesting to you that the transmission study, I think, needs to be far more than just a snapshot of facilities at a given point in time. To me, the most important part of this really has to do with the viability and the effectiveness of the mechanisms that exist in a particular area to address an evolving situation.

You know, I'm the Chairman in Connecticut. I am responsible for electric work. I do this exclusively. I do this every day of the week, God help me. And I can barely stay on top of this. I find it very hard to believe that any viable process for dealing with these issues can be anything other than a flexible mechanism that responds to the situation as it develops.

And with great respect, even though we're right here in New England, this is tough enough when you're here; I think it will be much harder to do from a substantial distance and perspective.

Finally, and I do mean finally, the last point I want to make is that I think the next set of challenges and the one that I spent a good deal of time talking with a number of my friends this morning about, and thank you for bringing them here so I didn't have to call them on the phone, is going to be the more careful development of the rules and the requirements and the procedures and the outcomes of the development of economically beneficial transmission. This is clearly going to be a major issue that very much needs to be solved and needs to be solved quickly. Events and political forces are overtaking us here, and we need to move very quickly in order to respond to them.

So, thank you for the opportunity to speak for Connecticut. Again, welcome to our capitol city and I'll look forward to questions and so forth.

David Meyer: Thank you, Commissioner Downes. Commissioner Brown?

Garry Brown: Welcome. Thank you. Good morning. I'm Commissioner Garry Brown from New York, Chair of the Public Service Commission there. I want to talk this morning, start with some real global and work our way down to the specific. The world has changed dramatically in the three years since you've done the last study, and I've been quoting these fuel prices just to show how dramatic the world has changed.

Ten years ago the price of a barrel of oil was $12; just last year it was $72. I can't keep up, I don't what it is this morning, but it's probably $140. The price of gas per dekatherm was $2 ten years ago, and just last year it was $7. Now we're talking $12, $13, and who knows what it will get to this winter. Even coal that was $40 ten years ago was only $48 last year per ton. Now it's well over $100.

What this means, and I don't believe this is a temporary phenomenon. Unfortunately, I believe this is a worldwide demand-and-supply situation that's going to keep prices very high.

Obviously, there is a lot of bad news associated with this, but I think there is some good news associated with this, and the good news is I think people are finally starting to take energy planning much more seriously than they have in the past.

And I guess one of my messages to DOE today is, as you do your study, why don't you take a look around? I think there are many more efforts that are happening now perhaps than when you first did this. And I'll just quote a few in New York, New York and the

Northeast, starting with a more global, regional effort in the Northeastern ISO/RTO Planning Coordination Protocol. There is certainly good work being done there, trying to take a look at this on a more regional basis.

But just in New York, our Public Service Commission instituted an electric planning proceeding last year to look at short-term regulatory reliability issues and a long-range electricity infrastructure planning process. That second half may have been substituted by the -- Governor Patterson recently instituted a state level comprehensive energy planning process that he just kicked off. That's going to take a look at the existing electric infrastructure, determine changes needed to be optimized, need to optimize rate payer benefits in the public good. And I think some of those efforts are going to be happening exactly in the same time frame that you laid out earlier. And hopefully we can gain some consistency there.

The New York Independent System Operator does an annual reliability study of the New York system, which takes a look at -- takes into account developments in neighboring regions. They're about to embark on a more economic planning study and take a good look at congestion themselves, I think, over the next year's time. I think John Buechler will be talking to you later on this.

The ISO is also performing a wind integration study, and I think one of the biggest challenges we have in New York and it seems to be a national challenge, is the difference between where the renewable resources are and where the loads are, and the continuing need to try to move the electricity from where the resources are to where the loads are.

And the ISO is going to conduct a study to try to figure out -- take a look at that major issue if we add 3,000 to 5,000 megawatts of wind in New York, which is certainly feasible and in the planning stage right now--what that will mean for the transmission system.

And I think New York City is going to speak later, and they certainly have started a planning effort themselves to take a look at transmission into the City, and I think we'll probably be hearing more about that later as well.

There are all of these efforts going on. And if all these efforts are based on different databases, different assumptions, different load growths, we're just going to end up with a lot of confusing answers. So, I encourage all of us to work together, and that includes us to work together.

The other thing I want to just pass along is there are a lot of things happening in New York. Somehow there's -- you get the feeling, well, nothing is happening in terms of congestion. Just internal work, National Grid has committed over $1.5 billion over five years for infrastructure upgrades; Consolidated Edison has estimated spending over $7 billion over the next five years for infrastructure upgrades. This is a lot of taking the existing system and making sure we maximize the use of it.

But we've seen new transmission. The cross-sound cable, which was mentioned, added 330 megawatts. The Neptune line from New Jersey to Long Island added 660 megawatts. The VFT upgrade of the Linden, New Jersey to New York City line added 300 megawatts. Con Edison built a new cable from Westchester to New York City that helps alleviate some of the congestion into New York City.

We've got in the works the Hudson Transmission Project from New Jersey to New York City, 660 megawatts. Another cross-Hudson project of 550 megawatts. We've got a proposed New York regional interconnect between Edic and Rock Tavern upstate, which

is 1200 megawatts. And like Donald, we've had other people coming in and talking to us about projects that aren't yet public, but I know that they're in the works.

So, there is a lot of action happening, encouraging things. And I think again as more focus comes on the energy issues, as there is more regulatory certainty about the way the world and the markets work and don't work, etc., I think that makes a difference that people are starting to get confident that maybe the world's not going to change overnight and have their investment pulled out from under them.

I'll just finish with just some more specific comments to DOE on the Congestion Study methodology.

I think first of all you should identify how consumers will benefit from relieving congestion. Some congestion may be the most efficient use of the system. Anybody that went shopping, which I did, because we had a party on July 4, went shopping on July 3, saw congestion in the shopping lines that day. That's not necessarily inefficient; that's just at times there is congestion, and relieving all of that may not be cost-effective.

So, we always have to take a look at congestion in its proper light and say, “Okay, what's the most -- where is the line? Where is the line?” DOE should focus on congestion, and this is an important one, where transmission relief will clearly yield a net benefit to the system based on system-wide cost and savings and not just benefit downstream load.

Unfortunately, relieving congestion often results in some big winners and some losers. And I think that has been one of the biggest problems has been convincing the people that don't benefit downstream from relieving the congestion, that this is somehow in their interest for it to do so.

DOE must identify possible solutions to identify congestion, and we need some sort of screening level analysis. And I say DOE must do that, but let me caveat that to bring it back to my first remarks. I think we all need to do that in our planning efforts. Let's take a look at what the -- how the congestion is adversely affecting consumers. We need to know that.

We would suggest the DOE convene maybe early on in an industry-wide technical conference to examine methods for evaluating congestion and determine an acceptable approach to be applied uniformly in the DOE studies.

The New York Independent System Operator has a big production cost savings as their primary metric to measure congestion, and I think we end up with different metrics and different systems. There's a lot of apples and oranges going on.

DOE should consider already developed data when preparing its study cases. Again, this is the coordination that I discussed earlier. And I think a lot of the congestion tends to focus on some basic analysis when there are both thermal voltage and stability criteria that can be compromised, that can result in transfer limits being changed that result in congestion. Again, taking a look at the range of things that result in congestion may result in better studies.

And I also just want to put in a pitch for something that I'm excited about and I think a lot of people are, which is using what we have smarter. Smart grid concept. The statistic I've been using lately is that we now lose more electricity in our system just from line losses than we used in 1948. There is an amazing amount of loss.

Our electricity grid really is a Twentieth Century grid at best, maybe a 1980s grid at best. And there are some real, real opportunities to take what we have and use it a lot more efficiently without the need for perhaps new lines to alleviate that, and maybe a little bit more focus needs to be paid on what we can achieve with the technologies that are out there with better communications, etc.

So, with that, those are some of the suggestions from New York, and thank Connecticut for hosting us here. And I'll be happy to answer questions later.

David Meyer: Thank you, Commissioner Brown. Let me turn to the other commissioners here and we'll hear from them, and then we'll come back to some of the other panel. So, Commissioner Fink from Maine?

Lisa Fink: Thank you. I'll start the introduction that I'm not a commissioner. I'm a senior staff attorney, but thank you for the appointment. I appreciate the chance to be here and I want to talk just for a couple of minutes about the process for this study.

The first thing I want to discuss is how DOE plans to consult with the affected states, and this was, as many folks are aware, a big issue the first time around. And I think this conference is a great way to start off. Again, I appreciate the chance to be here.

From Maine and many of the other New England states, though, the point that we would like DOE to bring home is that the consultation is an ongoing process. And Chairman Brown has suggested one way of making sure that there is a dialogue going through technical conferences. But however it's done, and technical conferences are good, but I think there needs to be an outreach to the states on an ongoing basis.

And NARUC, in their comments the first time around, suggested an example of how that could work very well, and it's the regional planning process that most of the RTOs have. In New England, it's the RSP, the Reginald System Plan Process, which has an accompanying planning advisory committee.

And there is an iterative process. ISO may speak more about it when their turns come up. But there's an iterative process where some findings are brought to the pack and there's a chance for interested persons to look at those findings, ask questions, probe the assumptions, and ISO and the utilities can go back and the studies develop along those lines.

This is a good model, because it gives the states an opportunity to actually point out some of the -- some concerns they may have with key findings, or as Chairman Brown has suggested, different metrics that they're using, and a discussion can occur over what the most appropriate approach is.

So, that I think, I don't think I could make that point too strongly, that there just needs to be a give-and-take, back and forth. And going along with that, I think there needs to be a very transparent process. The give-and-take really can't happen unless the states in particular have access to the underlying assumptions in modeling, because there is no way to test some of the preliminary findings unless you understand how they were arrived at. Those are really some fundamentals to start out with.

Then on how congestion is studied. We agree with DOE's approach taken sort of at the end of the designation process and looking forward to this study with the materials they've issued that the appropriate approach is to look at current or recent congestion as opposed to projected congestion. And in that regard, we believe that the congestion studies should not be used as a planning tool for future conditions.

And as other states have mentioned and ISO will discuss later, ISO actually does perform the planning function, and that does not need to be duplicated by DOE, and shouldn't be duplicated by DOE. The language of EPAct is consistent with the approach DOE is taking now, of looking at congestion being experienced rather than something that might happen if a number of possible events occur.

So, those are the main process points that I wanted to address. I did want to make a couple of general points about what's happening in New England. And I know, ISO will be more specific about it. But the reports that have been issued lately by ISO's market monitors, both internal and external, have indicated, and any scan of the pricing, the daily pricing in ISO New England will show that congestion in New England is decreasing, and price separation, of course, going along with that is decreasing.

David Patton notes in his report that just came out that average price separation among load zones continues to narrow. In addition, the first forward capacity auction that occurred earlier this year resulted in no separate zones and the export limit did not bind. So, there was no separate mean zone.

And another point worth making is that recent figures show a slowdown in growth of peak demands, and David Patton notes a substantial reduction in peak demand between 2006 and 2007.

A few other interesting bits of data are about demand response, and I think most folks are aware of the very heartening and robust participation of demand response and the first Forward Capacity Auction.

For Maine, there were 230 megawatts that qualified, of Demand Response that qualified in the SCM, and 170 megawatts were selected. And that was 14% of the Demand Response selected in New England in the Forward Capacity Auction.

In addition, there are approximately 400 megawatts of Demand Response that participates in ISO New England's Demand Response program.

And I think those are the main points I'd like to make. I'd be happy to answer questions later on. Thank you.

David Meyer: Mr. Keene. Mr. Keene from Massachusetts, the Department of Public Utilities.

John Keene: Thank you, David. And I also need to make a slight correction. I'm also not a commissioner. Senior counsel for the Division of Regional and Federal Affairs of Massachusetts Department of Public Utilities.

As is unfortunately the lot of being fourth in a line of state commissions, I have a lot of the same sort of things to say that the three previous speakers have, so I'll try and cut down my comments a little bit and not be too repetitive.

Basically, I have three areas where I want to make a few comments. First, just some things that have happened in Massachusetts since 2005, a few comments on the scope or framework of the study, and some process concerns.

First, just from a transmission construction perspective. Back in 2005, one of the major congestion concerns in New England was getting power into the Boston area. And that has been substantially, if not entirely relieved by a 345kV cable that was constructed by

NSTAR and now brings significant amount of power into the Boston area. So, we fixed that one.

And second, just last week, as Commissioner Downes was so nice to mention in his comments, Governor Patrick signed a Green Communities Act, which institutes some comprehensive energy reform in Massachusetts, including, among a lot of other things, but it requires our distribution utilities to purchase all available energy efficiency that cost less than supply.

So, going forward, instituting and reaching out and finding ways to implement this bill, and to achieve this energy efficiency, this is the Massachusetts DPU's top priority.

Energy efficiency and demand response can be the most effective means not only of reducing congestion, but more importantly of avoiding or at least deferring investment in both additional transmission and generation.

Some comments about the framework and scope of the study, I want to echo what my colleague from Maine said about the DOE's focus on current congestion. I know you've gotten a number of comments that have suggested you look more forward-looking at congestion, but I just want to reinforce to you that Massachusetts thinks you've got it right. You should focus on current congestion.

If you were to look at more forward-looking congestion, first of all, I think you would be duplicating much of the work that ISOs and RTOs, for instance, do in looking forward for liability purposes. And, second, you're going to run into more disputes and misunderstandings over the underlying assumptions and metrics that are used looking forward.

And, second, I'm going to echo I think in part what Commissioner Brown from New York said, and actually also what Commissioner Mayes from Arizona said in San Francisco. That I think DOE should try and focus on congestion, not just any congestion, but congestion that threatens reliability.

Commissioner Mayes from Arizona was substantially concerned about contractual congestion, which David, you mentioned in your opening comments. I'm not aware of that really being a problem here in the East, or certainly not here in New England, but we have different concerns.

After restructuring, I think we had a number of generation units that were built in maybe not the most ideal places, and some of that generation may be locked in. It may still be locked in. But I think we've -- and as Commissioner Downes mentioned talking about a flexible mechanism for addressing this, I think with the Forward Capacity Market we substantially instituted a mechanism to do that. And the Forward Capacity Market has a locational element to it that encourages generation to be constructed the areas where it's needed most, close to load. So, not every congestion problem is necessarily searching for a solution.

And then, lastly, just regarding the process, and again to echo my colleague from Maine's comments, I think any steps DOE can institute to try and improve the dialogue between DOE and the states, as well as other stakeholders throughout the process would be beneficial. I think the examples she gave of the RSP planning process that is used by ISOs and RTOs in an excellent one.

There are many meetings of the Planning Advisory Committee by ISO New England in which various elements of that study and the underlying assumptions and so forth are

discussed. And I think that anything you can do in that regard will help increase understanding both by the states and other interested parties, and will therefore hopefully decrease any disputes and misunderstandings about the goals and outcome of the study.

And, lastly, and along those lines, I also encouraged DOE to try and improve the transparency of the process as much as possible, understanding the last go around number of data points and assumptions were kept confidential.

I would encourage DOE to explore whether or not those can be made public this time around. And if DOE still determines that at least some information must be kept confidential, I suggest you look for a means of making that available at least to states or perhaps other parties as well through some sort of nondisclosure process. Thank you.

David Meyer: Thank you, Mr. Keene. Tom Simpson, okay.

Tom Simpson: Good morning. I'm Tom Simpson with the New York City Economic Development Corporation. And I'm not a regulator, but we do serve as the energy policy office for the City of New York. And I'd like to thank DOE for the invitation to participate in today's workshop.

I want to talk about the transmission congestion problem that our city faces, the need to increase investment in our region's transmission system, and the need to have appropriate mechanisms in place for planning and procuring new interregional transmission projects.

I'll also say a few words about a new initiative the city has launched that Garry mentioned, to develop a transmission plan for New York City. And I'm glad that Garry mentioned all the planning studies that are going on in the state, because there is a lot of planning going on, so I won't get too much into that.

The New York City region is growing at a healthy rate, and we need investment in power resources to supply that growth. Expansion of our regional transmission system is a necessary part of the solution, especially considering the limited availability of suitable, large industrial properties in and around the city for building new power plants. We appreciate the work that DOE is doing to facilitate investment in transmission.

The City of New York strongly supports DOE's designation of the Mid-Atlantic Area National Interest Electric Transmission Corridor covering New York City, East Upstate New York and New Jersey, and extending south to Washington DC.

New York City with the highest energy and capacity prices in the lower 48 states is at the epicenter at the designated congestion area. In 2007, the average annual LMP energy price in New York City was $81 per megawatt hour, compared to $66 per megawatt hour in New Jersey, where the cost of energy is 20% lower.

Capacity reference price, or netCONE, as it's referred to, in New York City is $123 per kilowatt year, compared to $107 in New Jersey, where the cost to build power plants is much lower. The price comparisons with East Upstate New York are similar.

Bear in mind that our prices are much higher than New Jersey and East Upstate New York, but these areas themselves are within the designated Mid-Atlantic congested area. If we were to compare New York City prices with locations outside of the congested area, price differentials would be even more dramatic.

So, you can see why I'm saying that New York City is at the epicenter of the Mid-Atlantic congested corridor, and I want to condemn -- or commend DOE -- I want to

commend DOE for accurately reporting our predicament in the 2006 National Electric Transmission Congestion Study.

New investment in transmission is needed to improve for liability and to address the relatively high power prices in New York City compared to PJM East and Upstate New York. Expanding our transmission reach will increase access to diverse power plants and open to greater competitive forces and in-city market that is currently dominated by a few generation companies.

Long Island Power Authority's recent success with the 660 megawatt Neptune cable from New Jersey to Long Island is a great example of the benefits of investing in interregional transmission. Since being energized in July 2007, the cable has been heavily loaded and has significantly reduced congestion into New York City and Long Island.

For the second half of 2007, and I'm going to quote some figures from the Market Monitor Report, the average import was 540 megawatts per hour, which is an equivalent to about an 82% capacity factor.

Price differences between Long Island and East Upstate New York decreased from about $27 per megawatt hour in 2006 to $16 per megawatt hour in 2007, primarily due to the installation of the cable.

According to LIPA, the cable saved over $20 million in its first three months of operation. At that rate, and this is my estimate, that the project payback period could be less than 15 years for an asset that should be in place for 60 years or more. And we have to keep in mind these are long-term assets, and these are long-term investments.

Numerous transmission projects have been proposed to address congestion into New York City from PJM and upstate New York, but these projects are having difficulty moving forward, and I want to mention a few of the roadblocks that need to be addressed.

In most locales the transmission company or the load serving entity takes responsibility for building, for procuring economic transmission projects. For example, LIPA has been willing to enter into long-term contracts for transmission capacity and has therefore been able to complete two major new additions to the grid.

Neptune Cable and the 330 megawatt cross-sound cable from New England. In New York City, Con Edison's role as the transmission owner includes building transmission upgrades for reliability. But as a matter of corporate policy, Con Ed does not plan and build projects that primarily address congestion.

The LSEs that serve New York City customers are Con Ed with 53% market share, ESCOs with 30% market share, and NYPA with 17% market share. And out of these, only NYPA has shown an interest in signing long-term contracts for new transmission resources.

The point is that, unlike Long Island, we lack a public service entity charged with overall responsibility for planning and promoting economic transmission projects.

Some of the other reasons why transmission projects face an uphill battle, and I'll just tick these off. High project costs, underground and underwater transmission lines in the dense urban environment can cost $15 million per mile or more. This is based on, I think, M29 experience, the Con Ed project from Yonkers into Upper Manhattan. And that's just a fact of life that these projects are very expensive and we're looking at heavy investments.

High interconnection costs. For example, the Hudson Transmission Partners proposal built a line under the Hudson River to interconnect PJM with Manhattan and sell the transmission rights under a long-term optic contract with NYPA has been saddled with steep interconnection costs in the New Jersey side.

And this is again a fact of life, where the line is going into an area that itself is congested, and so we're facing these high interconnection costs for upgrades on the New Jersey side.

Political opposition. For example, the New Jersey Board of Public Utilities is protesting at FERC against PSEG's proposal to build a line to connect the Bergen generating plant in New Jersey to the Manhattan grid on the grounds that the project might make New Jersey supply of electricity less reliable and prices higher.

And then there is local opposition. For example, many landowners in communities in the north of the city have expressed strong opposition to new overhead lines that might impact property values and scenic resources.

Breaking the logjam will require new approaches or adopting best practices used elsewhere. Long-term contracts or other mechanisms for guaranteed cost recovery will clearly be needed to encourage investment in new inter-regional transmission projects. In some cases we should consider the use of public/private partnerships to develop projects.

An important step towards a solution, I know John Buechler is going to talk about this from the New York ISO, is being put in place in the New York ISO, which has proposed to implement a new forward-looking economic planning process in response to FERC Order 890.

The ISO will prepare economic analyses of specific proposals promoted by transmission developers, and put these proposals up for a vote of the project's beneficiaries who would bear the cost responsibility.

Recently the City launched its own initiative to help address the planning gap. The Energy Division of the New York City Economic Development Corporation, that's my division, is developing a transmission plan for our area in cooperation with the New York ISO, PJM, the local utility companies, and the New York State Public Service Commission, with the assistance of a nationally recognized consulting firm. In fact, I think it's the same firm that did the congestion study for the Northeast last year, or 2006, CRA International.

The City's planning study, which we expect to complete by the first quarter of 2009, will be the first comprehensive look at our area's transmission needs in some time. We'll be happy to share the results of the study with DOE, and we hope it will provide useful input for your congestion study.

Thanks again for the invitation to participate, and I look forward to any questions.

David Meyer: Thank you. We look forward to seeing the results of your work. It sounds interesting. Let me turn to Phil Fedora.

Phil Fedora: Good morning. My name is Phil Fedora. I'm the Assistant Vice President of Reliability Services at the Northeast Power Coordinating Council, Inc. NPCC appreciates this opportunity to offer the following comments prior to the start of the 2009 DOE Congestion Study.

For those of you that aren't aware of our organization, NPCC is a New York State not-for-profit membership corporation. The purpose of NPCC is to promote and enhance the reliable and efficient operation of the international interconnected bulk power system in Northeastern North America through the development of regional reliability standards with compliance, assessment and enforcement of the continent-wide and regional reliability standards, the coordination of system planning, design and operations, and the assessment of reliability. And the establishment of regionally-specific criteria with the corresponding monitoring and enforcement of compliance with such criteria.

NPCC has over 40 years of experience in an international coordinated approach for maintaining reliability in northeastern North America. And, again, geographically, NPCC United States includes the six New England states, the state of New York. NPCC Canada includes the provinces of New Brunswick, Nova Scotia, Ontario, and Quebec.

DOE has stated that the 2009 Congestion Study will focus chiefly on the analysis of recent or current electric transmission congestion. As you have already heard today from this panel, the addition of new transmission and generating capacity over the past several years, along with the growth of demand response programs, those that reduce the peak demand in conservation, have clearly strengthened the ability of New York and New England to reliably meet electricity demands.

The installation of a second 345kV line between Maine and New Brunswick this past winter, last summer's New Jersey to Long Island HVDC cable addition, along with the completion of other transmission upgrades in New England, have strengthened the overall reliability of the NPCC system.

Over the past several years, southwestern Connecticut has faced reliability problems through the transmission constraints into and within that geographic area. The combined effect of the increased transmission capacity placed in place, along with a significant amount of demand response programs, added in southwest Connecticut, have gone a long way towards mitigating these concerns.

A number of transmission upgrades are in service or expected to be in place this summer to enhance reliability within NPCC. Transmission upgrades completed last year, for example, have increased the capacity to import electricity into the Boston area by approximately 1,000 megawatts, alleviating previous reliability concerns.

NPCC would like to emphasize that the DOE 2009 Congestion Analysis consider the Northeast as a whole, not only modeling those transmission demand response and generating resource projects in the United States, but also those corresponding projects in the neighboring Canadian systems.

Coordinated analysis is necessary to properly assess the operation and impact that future reinforcement of NPCCs and its neighboring regions transmission systems, demand response programs, and generating resources will have on the congestion determination.

In addition to understanding the respective applicable market rules of the region, proper modeling of the operation of the NPCC system also requires an in-depth understanding of the applicable NERC reliability standards, the NPCC criteria, and the New York State Reliability Council's reliability rules.

As you know, the New York State Reliability Council's mission is to promote and preserve the reliability of electric service on the New York State power system through their reliability rules, which are complied with by the New York Independent System

Operator and all entities engaging in electric transmissions, ancillary services, energy and power transactions on the New York State power system.

NPCC's criteria further define more stringent regionally-specific reliability requirements, and the NERC reliability standards set the reliability requirements for planning and operating the North American bulk power system.

NPCC also recommends, in addition to the studies that have been mentioned here, review the latest information available through regional reliability assessments and the Northeast Reliability Planning initiatives prior to the start of their 2009 Congestion Study. The NPCC Seasonal Reliability Assessments are available on our website.

The New England Regional System Plan and its associated activities are on the ISO New England website. The New York Comprehensive Reliability Planning Process is on the New York ISO website. The Inter-Area Planning Stakeholder Advisory Committee's activities are on the Inter-ISO website. And the Ontario Reliability Outlooks are available on the IESO, that's the Independent Electricity System Operator of Ontario's website.

NPCC thanks DOE for their invitation to participate in today's workshop and looks forward to working with the DOE during the course of this study. Thank you.

David Meyer: I want to thank all of the panelists for being very responsive, I would say, to the points of interest that we have raised earlier. And so we've got a lot of good suggestions, good information, good input here.

I want to turn to one particular topic, that is the question of publicly available data, because to the extent possible, we want to focus -- I mean, ideally we would focus entirely on publicly available data.

So, I want to ask all of the panelists to list out what they would regard as the primary sources, and then maybe some of the not so -- some of the sources that are available but just might not otherwise come to mind. What are some of the things that ought not to get overlooked in our process in terms of available data sources that you know about? Let me ask the panelists in general.

John Keene: And just the first things that come to mind, I'm looking at Steve Rourke, the resources available for ISO New England, that their regional system plan, their market monitoring reports, to the most recent report, the annual 2007 report, and the various needs assessment studies and other system planning studies that ISO does, all of which are either publicly available on ISO's website, or some material that may be not public and confidential. For instance, critical energy infrastructure purposes, but those are, of course, available to the state through means we have through ISO's information policy.

So, even though they wouldn't be publicly available, it would be available both to DOE on one side and to the states on the other as well. That would be the most obvious place to point to.

Lisa Fink: Thanks. It's my turn to echo my Massachusetts colleagues' recommendations. I think those are the first places to look. So much work has been done already. I think also at a finer level sometimes the state siting proceedings have additional information, and that most of that is public except where it probably falls into the same category of critical energy infrastructure.

So, generally, I think the information is there and much of the work has been done, so I won't belabor the point.

Garry Brown: I think the problem depends on whether you're looking backward or looking forward. If you're looking backward, I think there's a lot of data out there that's publicly available including all the way down to bid data that's six months old, at least in New York, and I think it's a shorter time period in New England when that all gets released. So, if you want to do a "what if" analysis based on looking backward, I think there's a lot of data available.

Looking forward, I think you start to get into more proprietary data and you get into more projects that may not be public yet, that people know about that aren't going to want to be made public before they're ripe. So, I think it's very dependent on what you're looking at, what you're trying to do with the data. If you're just trying to simply look backward and determine how much congestion there was, I think there's an awful lot of data there. You try to take it to the next steps is where you start to have more problems.

Donald Downes: And actually I'll follow on with that point. We could actually get along if we work on it here. Well, this is the first time Garry and I have actually had a chance to meet in person. You know, an allied point here is the public in the greatest sense of the word is not going to have a lot of confidence in the results of the study if there isn't some way of verifying these things. And I'm kind of in the mode my colleague is suggesting here, which is to the greatest extent possible, the data ought to be all from sources that can be released at the time. And there's a gestation here. You see the bidding activity today and in New England it's 90 days later. The study takes you 90 days to write, I have trouble seeing how financially advantageous those -- or commercially advantageous those pieces of data will be 90 days out. So, I'm in a not very distant mode here.

Phil Fedora: The only thing I can add is the coordinating body that we are at NPCC, any information that is considered sensitive or confidential, we have our own third-party nondisclosure agreements with our members, so that we can use the data and analyze it. But then what we publish is aggregated and it's available in a public format. So, the best source of information would be back to our sources, which is our membership, which are the ISOs or our memberships and our companies.

Also, there may be, as you know, EIA has a lot of data requests that they give out as well, and you may be able to find within. There's a NERC data collection working group that works with members of the EIA for LTRA, which is the Long Term Reliability Assessment data collection effort. So, although it may not deal explicitly with congestion, there would be places to get projections for future loads and future resources and command response.

Tom Simpson: Can I add one? I'll just add one.

David Meyer: Sure.

Tom Simpson: And I'd just echo that I think for historic information, the New York ISO will be your best source. I just want to note, the study that we're doing that I referenced, we do plan to do a snapshot into the future congestion, and we hopefully will share that with you in a timely way. Probably for close end year, maybe sometime between now and 2010, and the study will be vetted through the stakeholders that I mentioned, including the New York ISO, and it probably will be consistent with the RNA. So, I think it will be something that you may want to review.

David Meyer: Now, let me remind the panelists to identify yourselves each time you speak, because otherwise people on the webcast won't know necessarily who is speaking.

Let me ask people about, you know, you can look at the data and what appears to be a trend, say, from 2002 through 2007. But you may look at that data with an informed eye and say don't assume that's going to continue. And so I want to ask the panelists, are there instances, problems of that sort that you want to bring to our attention, things that you think were trends in the past? But it's back to one of Commissioner Brown's points, we're in a period of major change, major tumult going on here, and so there's every reason, I would say, to expect that the future isn't going to be like the past. And so I just want to get your reactions to that.

Garry Brown: Yes, and I'll give an example, if we really get to a real carbon tax. The economics of coal with not only the coal price having doubled and a half in the last year, you throw on a carbon tax on top of that and let's move out to the Midwest and we'll be out of New England, because there really isn't a New England/New York problem. But certainly the economics are bringing West Virginia coal to New Jersey, for example, which is a real project out there, is going to change dramatically--potentially could change dramatically if the cost of coal and the cost of the carbon tax associated with the coal change the economics.

So, I think a simple view backwards and say -- and it also depends, I wanted to make the point about how you -- is congestion a physical congestion based on how many kilowatt hours get congestion, or is it an economic congestion based on the difference of the price between the plant you're not running in one place and the plant you're running in another?

If congestion is a natural gas plant on one side of the constraint and another one on the other side of the constraint that's got a marginally different heat rate, it's congested but it's probably not costing anybody very much.

And I think what the problem is, I think everybody really looks at it from the economics. What's it costing people? Because you can't run a cheaper plant somewhere and you have to run a more expensive plant somewhere else.

And because of the variations in those costs in the future, you could definitely see that past performance does not equal future results. I'm sure not exactly how DOE takes that into account. It's got to do, I guess with the evaluation process once projects are proposed and trying to do some sort of screening analysis to determine "Is this worthy," for lack of a better term. And this was Garry Brown from New York and I'm sorry.

Phil Fedora: I would have to agree that the past isn't necessarily prologue. With the number of projects that are on the books or planned for just the wind development alone would lead you to believe that there is going to be some big changes in the usage patterns, I mean, coupled with the growing importance of demand response programs and the shaving off the peak loads.

I think one thing that would be interesting to look at would be based on what was -- and you can see how much different it would be, if you look at what was predicted off of the last DOE study compared with actual might be an interesting comparison to give an idea on which assumptions were good, which ones turned out to be not so good, and get some lessons learned from looking backwards type of analysis. This is Phil Fedora at NPCC.

Lisa Fink: Lisa Fink from the Maine PSC. I think DOE does have to take into account its own definition of persistent congestion. And I think that does help address your concern somewhat. So that if you saw a trend beginning, I think there might be a desire to try to

figure out what's going to happen with it. Will it get worse? Will it get better? What's going to happen with oil prices?

From a state regulatory standpoint, I think it's fair to say that usually when folks try to predict the future they're usually wrong. There are a lot of -- there's a lot of history with PURPA contracts, where there is an effort to try and figure out what the avoided costs would be 10 to 15 years out. And there are many folks that would say the guesses could have been better in 20/20 hindsight.

So, I think the key is really the fact that what the statute says to look at, which is existing, where congestion is being experienced, but also that it has to have been over a period of time. That said, I think it's true to those principles to look at what's going on right now in terms of what's eminent. I mean, when you look back at the whole purpose for the congestion designation section of EPACT, it was to break logjams.

And so if you've looked at an area that has had severe congestion and there's been a problem getting anything sited, that's where I think Congress should step in. On the other hand, if as in the case in southern New England, where there was congestion, but the projects are either being built, being completed, or they're moving forward and there's not been any sort of logjam, I think there you can use that as a very good prediction. It's not like trying to predict prices or what may be built in terms of resources 10 years out. If you see something's about to be built, I think that's a pretty good indicator that the problem's being addressed.

So, nothing is completely black and white, but I think those are some good guide marks to use.

John Keene: John Keene, Mass DPU. I actually just want to refer you back to really what was Don Downes' point from Connecticut, and that is if you see a trend, you need to look at, as my colleague from Maine mentioned, first of all, there are specific plans or projects in place, even if not constructed or completed yet. Are there plans for those? But, two, this is Commissioner Downes' point, are there mechanisms in place to address it?

I think here in New England, if you look at the Forward Capacity Market, the first auction appears to have been very successful and procured resources substantially in the place they were needed. We had big numbers, large numbers of the megawatts in that capacity auctioned in Connecticut and in Massachusetts. And if you look at ISO New England's interconnection queue, you also see lots of megawatts of projects for new generation supply in Massachusetts and New England.

So, I think if you see a trend, then you look to the mechanisms or plans that are in place. And I think this is where it also goes back to that process issue of dialogue with the states and the interested parties, where you may not be aware of these or understand them as well as folks in the region closer to day-to-day goings on. And that's where we can help you understand and help provide that additional information to understand those trends better.

Tom Simpson: This is Tom Simpson, New York City. I have seen studies of proposed transmission projects into New York City, and without giving details, just the flavor of it is generally those studies show persistent benefits for projects like that out X years into the future. Part of the reason is that the in-city generation base is old and inefficient, and so the in-city prices tend to be high. And so the flavor of the studies that I've seen shows persistent benefits to those projects.

So, I would say, yes, at least from the information that I've reviewed, it looks like congestion is projected to be a persistent problem. I couldn't say whether it's going to be up X percent or down X percent, but at least from the studies, that's what I take away.

David Meyer: Please identify yourself.

Donald Downes: Oh, that's right, sorry. And we had such a good string going. Everybody got it before me. I'm Don Downes from Connecticut. I guess I kind of look at the DOE transmission study as perhaps a level of analysis that the states and the regions don't really have.

We each concentrate closely on our own regions, and we are in the business of looking at the existing situations, making our best judgments about what tomorrow holds and what activities we need to undertake in order to meet new challenges successfully. And so I guess I'd counsel you that the greatest value of the study, it seems to me, is first off providing the raw, basic data so people can look at it and make regulatory decisions, commercial decisions, new investment decisions.

And, secondly, so that we all get a sense of how these interconnect with each other. The corridor that my friend from New York was referring to extends all the way from essentially New York City to Washington DC. That cuts across several different operating segments and at least two ISOs. And I'm not sure that, at least speaking for me, I have enough problems right here in New England; I honestly don't track most of those things. So, it's useful from my point of view to see how all these are fitting together on a little broader basis.

David Meyer: Well, we have about 30 seconds to go here, so I'm going to thank the panelists for a very stimulating discussion. A lot of great input. We will break now and we will start promptly at 11:45 with the second panel -- 10:45.

[Break for 15 minutes]

David Meyer: We're going to resume now with our second panel, and this panel is a somewhat more technically oriented group. And the hope is that these people can help us figure out, okay, how do we -- if we want to operationalize some of the concepts and congestions that were put forward in the first panel, how would we do that? What are some of the practical ways to do that? And so, once again, I will ask the panelists to introduce themselves, and we will simply go down the table, no particular order. So, I will turn first to Brian Forshaw from the Connecticut Municipal Electric Energy Cooperative.

Brian Forshaw: Okay, thank you. My name is Brian Forshaw. I'm with the Connecticut Municipal Electric Energy Cooperative, also known as CMEEC. CMEEC is owned by the municipal utilities in the state of Connecticut. We provide full requirements wholesale electric service to the state's eight public power systems, as well as the Mohegan Tribal Utility Authority, also known as Mohegan Sun Casino. So, anyone when you're done here, you want to take Route 2 and head on towards the shore, it's a great summer day, okay? Feel free to stop at the Mohegan Sun and you'll have a wonderful time.

But before getting into some of the key topic areas that have been identified already, I did want to start by just emphasizing that there is an awful lot that's already happening here in New England in the transmission arena. You only have to look at the transmission revenue requirements that are embodied in the Regional Network Service rate to see that.

Since 2005, the RNS, the revenue requirements in the RNS rate have gone up by over 250%. That's just the tip of the iceberg. If you look at the ISO New England Regional System Plan, there's a number of, call it big ticket transmission projects that are already

scoped out, that are already coming. And that's going to probably double the transmission rate again over the next few years.

I'm not trying to imply that anything inappropriate has happened or even that these projects aren't needed. But I think the part and parcel of it is that it's important to recognize that the transmission portion of customers' bills are now approaching the level of the capacity cross component in the wholesale markets.

Now, we spilled an awful lot of blood in the last five years or so trying to get a capacity market in place and now suddenly transmission is at that same level. I guess in looking at the other panelists, I'm viewing myself as probably the load-serving entity rep, so that's the perspective I'm taking.

From our perspective, when you look at the transmission system in a bid-based settlement system like we have here in New England, it's important to look beyond simply the congestion component that's built into the locational marginal prices. Persistent uplift due to out of merit operational generating units very often to provide second contingency coverage in case a unit or a line goes out on the transmission system. The existence of reliability must run agreements. All can be an indicator that there are problems, local area problems anyway, going on out there in the system.

Again, as a load-serving entity, the charges embodied in uplift around our contracts are problematic because it's virtually impossible to do anything in the market to hedge these costs.

We talked a lot -- in the first panel there was a lot of discussion about data sources. And I guess probably the most important significant data source that I would commend to you is what you heard already, which is the annual regional system plan for New England that's prepared by ISO New England. It provides a great deal of background information concerning developments on the bulk power system. It's got an extensive stakeholder process that not only includes the market participants, but it includes the rate regulators in the states, the siting bodies in the states, and the environmental regulators who participate in that process and provide a great deal of input into the development of materials and conclusions that go into the report.

Probably another good source of data is the Forward Capacity Market informational filing. There's a qualification filing that they have to make when the resources that go into each auction get prepared. And that will also give you some idea about potential sites for new supply resources as well as demand resources.

Finally, and hopefully this is the one takeaway you'll leave from me today, is it's really important to keep in mind we have an integrated bulk power system. You put in a new transmission line, it's going to affect the compensation to a generator. You put in a new generator or reduce load through demand response programs, it will affect flows over the bulk transmission system.

Perhaps the best, most recent example that I can give you is the example of the first phase of the southwest Connecticut transmission loop, also known as the Bethel/Norwalk Line. Chairman Downes talked about it earlier. But that was activated in October of '06, I believe. And prior to that point, congestion charges that are embodied in the LMPs were fairly substantial but highly concentrated to nodes located in the Norwalk/Stamford area.

Well, now that the line has been activated, the magnitude of the congestion charges at individual nodes has gone down, but congestion is appearing at a large number of additional nodes.

And the bottom line is that when you spread it out and allocate it to loads at the end of the pipeline, the net cost to consumers is actually about -- in the state of Connecticut is actually about the same. There are other examples related to uplift in southeast Mass that provides sort of similar examples.

Just in closing, briefly, I want to emphasize that it's important to look out for unintended consequences when you operate in a competitive market environment.

As I said before, changes in the physical infrastructure will get manifested in market outcomes. Changes in market design or bidding strategies by individual assets can have an impact on flows on the transmission system.

And most of the projects you talk about, whether it's transmission or generation or anything else, are long lead time. And so with lead times of three, four, five or more years that are associated with these kinds of projects, it's really important that the full risks and impacts are understood as well as possible before committing to any substantial costs, which ultimately electric consumers are going to end up paying. Thanks.

John Buechler: Good morning. My name is John Buechler. I'm the Executive Regulatory Policy Advisor for the New York Independent System Operator. On behalf of NYISO, I'd like to thank David and the DOE for their invitation to participate in today's workshop. We certainly appreciate the significant effort the DOE is about to undertake as part of your responsibilities under the 2005 EPAct. And note that NYISO, ISO New England, in conjunction with the ISO RTO Council's Planning Committee, provided substantial information to the DOE to support your initial congestion study. And once again we stand ready to offer our assistance to you for the 2009 Congestion Study.

First of all, I'd like to give a little bit of background with respect to the New York ISO that I believe is relevant to today's discussion. NYISO is a strong supporter of market-based solutions for meeting both reliability and economic needs, and this philosophy reflected in the design of the national wholesale markets as well as its comprehensive reliability planning process, which treats all resources, generation (inaudible) response as well as transmission on a level playing field and which gives explicit preference to market-based solutions over regulated backstops.

As part of its reliability planning process, the NYISO has also been tracking and reporting historic congestion in New York since 2003, in accordance with specific metrics that would develop and approved through the NYISO stakeholder process. This information is posted on the NYISO public website to provide information to market participants in developing their business plans. And more about this in a moment.

As evidence that our market-based approach has been working, over 6,000 megawatts of new generation and 1,000 megawatts of emerging transmission has been added in New York since the beginning of the NYISO's operation in 1999. The large majority of which is located where it's most needed for both reliability as well as economics, that is, in the southeast portion of New York.

Accordingly, because of the NYISOs locational price signals for energy, ancillary services, as well as capacity, New York has not experienced a type of transmission buildouts that had been experienced by our neighbors.

Our comprehensive reliability planning process continues to provide market-based responses which are more than sufficient to meet the identified reliability needs.

In that respect, I note that our 2008 Comprehensive Reliability Plan is up for approval at the National Board of Directors Meeting next week, and it will be posted on our website subsequent to that approval.

What are some recent updates in New York since the discussions back in 2005 and 2006 with the DOE? There have been many, some of which have been mentioned already here today by the first panel. But in December 2007, the NYISO filed a proposal with FERC for, including among other things, a forward-looking economic planning process in response to Order 890, which will supplement our ongoing reporting of historic congestion that I just mentioned.

Under this proposal, the NYISO will estimate congestion for a 10-year period as well as analyze potential solutions including generation, demand response, as well as transmission. In accordance with Order 890's requirements, this information will be also on the NYISO website, so that our market participants can consider the development of specific proposals, to address congestion in a cost-effective manner.

The NYISO process includes specific metrics including a statewide production cost savings eligibility threshold, and a cost allocation methodology based upon reduction in LMP load costs.

Finally, a unique feature of our proposal that Tom Simpson referenced this morning is a requirement that at least 80% of the project's beneficiaries must vote to approve the project in order for it to receive regulated funding under the NYISO tariff. Pending approval by the Commission, we plan to initiate this economic planning process in 2009.

The NYISO recently received approval from the Commission to implement a deliverability requirement as part of our interconnection procedures for those generation resources that wish to participate in the New York ISO's capacity markets.

NYISO is currently in the process of finalizing its market rules and implementation procedures and plans to implement this new product for the interconnection class year of 2007, which is nearing completion.

NYISO is currently engaged in a study to examine the impacts of a large increase in the potential amount of wind generation within New York. We have nearly 8,000 megawatts of wind generation in our interconnection queue. As part of this study we plan to implement the impact on both system operations and planning, including the need for transmission infrastructure. This study is expected to be completed by the end of this year and will certainly be made available to DOE.

Under the Northeast ISO RTO Coordination and Planning Protocol, which is an agreement among New York ISO, ISO New England, and PJM, we're about to begin a study which will identify transmission facilities with potential interregional benefits. This study is expected to be completed in the early part of 2009 as well.

I also mention two studies that have been discussed this morning by Tom Simpson and by Garry Brown, the New York ISO is involved in both the New York City transmission study, as well as the State Energy Planning Board process that was recently underway in New York.

And then, finally, as DOE is aware, ISO New England and indeed the other ISOs and most major utilities in the Eastern Interconnection are participating in a joint coordinated system planning effort, which is developing a long-range conceptual transmission

scenarios under varying assumptions of wind resource penetration for the Eastern interconnection.

I certainly support the comments that were made by Garry Brown and Phil Fedora this morning of the need to coordinate analysis and the need to consider these ongoing studies in the development of the DOE's congestion report for 2009.

The Department also asks for comments about changes in congestion patterns in regions since the last congestion study was reported. And I offer some observations that were taken from the NYISO's Independent Market Advisor's State of the Market Report, which was issued in May 2008 and also available on the NYISO website.

Congestion into downstate areas, Long Island, New York City in particular has declined over the past two years based primarily on the addition in 2006 of the cross-sound cable between New England and Long Island. The Neptune cable between New Jersey and Long Island in the summer of 2007, and improved system modeling capability of the New York City load pockets that NYISO implemented for its dispatch software in the summer of 2006.

We experienced higher net imports into Western New York from Quebec Ontario and PJM, which contributed to increased congestion on the Central East interface during 2007 primarily due to voltage limitations.

A few things unique to New York's reliability rules, thunderstorm alerts and eastern 10-minute reserve shortages, while infrequent, can have a significant impact on congestion, especially from the capital areas through the Hudson Valley.

As a counter to all of this, unfortunately I suppose, and which we're all experiencing, sharply rising oil and natural gas prices over the past year have largely offset reductions in congestion costs due to the above system improvements.

Finally, I said I would get back again to a brief mention of the congestion metrics that we use in New York. As noted before, the NYISO has been tracking, reporting historic congestion for many years. By agreement with our stakeholders, we went through a rather lengthy analytical process to discuss and explore various metrics for looking at and analyzing historic congestion in New York a number of years ago. And that wound up with a formalized set of metrics that were approved by our stakeholder operating committee.

Under that, the principal metric that we utilized is the impact on bid production costs, which Garry Brown alluded to this morning, which is a measure of the overall efficiency gains or losses due to congestion.

The NYISO also calculates and reports historically other metrics including congestion payments, both hedged and unhedged, i.e., with and without the effective, what we call transmission congestion charges, load payments, hedged and unhedged, and also generator payments.

These metrics are and have been reported on a daily basis for each of the NYISO's 11 load zones. In addition, the facilities, which are the greatest contributors to congestion are also identified on a daily, monthly and annual basis. Again, this data is on our website and available to the DOE.

We're pleased to provide any further assistance as well to support your 2009 Congestion Study. And, again, we thank you for the opportunity to participate here today. Thank you.

David Meyer: Thank you, John. Next we have Laurie Alysworth from Northeast Utilities.

Laurie Alysworth: Thank you. Good morning, you all. I am Laurie Alysworth. I'm Vice President of Transmission Projects, Engineering, Construction and Maintenance for Northeast Utilities here in Connecticut. I, too, along with Don Downes, would like to welcome you to our capitol city and to our state. Thank you. Nice to be able to actually stay at home for once.

For those of you who don't know who Northeast Utilities are, our footprint covers Connecticut, western Massachusetts, and most of New Hampshire.

First, I'd like to thank DOE for asking NU to participate in this Congestion Workshop. We certainly applaud their desire for transparency and for establishing a consistent process by conducting these workshops all throughout the United States.

We also think it is highly important to look at this type of issue, congestion, from a federal level, especially as we head into an environment where fuel prices are at an all-time high, and where multi-state lines will be needed to provide both regional and inter-regional benefits.

NU believes that strengthening the transmission infrastructure so there is a reliable, free-flowing grid, is extremely important and probably more than most people realize. There is a need for robust infrastructure in order to be able to connect new generations and new generation and new locations to the load centers. And I'll talk a lot more about this in a few minutes.

We feel that the New England process for reliability projects established through ISO New England is working quite well. As Don Downes mentioned earlier this morning, in Southwest Connecticut, we had one of the two most vulnerable areas with regard to reliability. And also that same area was in the top 10 as far as congestion.

We are proud that we and all the other New England transmission owners have had the ability to site and construct reliability projects throughout New England with successes in Vermont, Massachusetts and Connecticut, and soon to be in Maine and New Hampshire.

These reliability projects whose origins date clear back to 2000, 2001, have been built during a time where project costs have been highly impacted by the global economy. Who would have though, as we said this morning, that we would be looking at oil at $140 a barrel? Gas prices have gone up 93% since last August. Construction costs for power plants and for transmission, 130% up over 2000 costs. That was from the Brattle Group analysis of construction costs that were published earlier this year.

Commodity prices, as you all know, have seen significant increases mostly from global demand. And, of course, we always fight the continued decline of the U.S. dollar.

Remember in the alternatives that would have been to these reliability projects would have seen the same sort of inflation and cost pressure. However, I bring this up because not only have these projects, which were not optional since they were addressing critical reliability issues throughout New England, they also had a significant secondary benefit, and that was a reduction in congestion costs throughout New England.

The Bethel/Norwalk line has a special place in my heart, and indeed that secondary benefit to that we saw from 2006 to 2007, a huge reduction in congestion costs. Now, did we get rid of congestion costs? No. Are we seeing different trends? Yes, and I'll speak to that in a few minutes as well.

For those of you who don't know, New England has an independent market monitoring unit, the Potomac Economics, and that report preliminarily has come out for 2007. The final one, I think, is due within the next month sometime. And it found several findings. Norwalk/Stanford, which is the southwest Connecticut area, became less congested in 2007 due to the completion of our Bethel/Norwalk transmission project.

The Boston congestion, as you heard, with NSTAR projects, declined in 2007 due to their transmission addition. And still congestion remaining but there are other reliability projects currently in construction and in plans that should reduce congestion costs throughout New England even more.

We believe that for this upcoming congestion study, DOE needs to be -- to more completely define congestion costs. We believe the costs should not just be the congestion piece included in the energy component; they should also include all other elements that increase customer costs because of inadequate transmission infrastructure.

For example, we've heard from other people reliability must run units. We have that both in Connecticut and on our western Mass area. And higher locational marginal prices during contingencies and maintenance outages. This is a new trend that we are seeing a lot of currently, and that is congestion is all over the place depending on what units are out and what kind of outages we're having to take for construction, and what outages we're taking for pure maintenance sake.

Expansion and improvement of the transmission infrastructure provides many benefits. Obviously, all of these projects that we've been building in New England have been reliability based. We've needed them for critical reliability issues, but they have reduced congestion. They've helped eliminate RMRs and there are projects on the books and in planning right now that will continue to help reduce the RMR.

They have externality benefits from no longer having to depend on older, inefficient fossil units, less emissions, better performance, better heat rates.

Transmission gives you access to new generation, renewable and carbon-free particular, and that is something we're all dealing with when we look to the future. And it allows the marketplace to be more competitive and puts all generation on the same footing.

In closing, we believe the DOE should do the following: Access all available existing data of which New England we feel there is a lot of. ISO New England's website has all the day ahead congestion costs for the last couple of years, and I'm sure Steve Rourke is going to speak more specifically to that.

We've heard about the regional system plans that ISO has. The Market Monitoring Unit Report will be available soon. That's going to have a lot of good data in it. And each individual utility now in New England I think has a very substantial planning department. I know Northeast Utilities does, and I think some of the work that the individual utilities are doing could be used as well. Have all cost components driven by inadequate infrastructure included in the cost of congestion. And I think we need to look not only where congestion is happening, but again as you pointed out, we need to start analyzing the trends.

Currently, when I go out and look at the ISO website and start looking at the trends of congestion in Connecticut, in particular, they're very unique. They're new, they're not expected. So, all of us are looking for help in interpreting all the causes of congestion so that we can better analyze what is actually happening.

I think DOE needs to consider looking at more than just the present. I guess I counter to several earlier positions. We need to look to the future as well. The renewables, the carbon-free generation impacts to the grid is going to be huge.

Looking backward is very important for establishing trims, but we've also got to look forward, because when we really think about it, we're in such a rapidly changing environment that what is current, what is current now took five years, eight years to build, to get through the siting process, to get through the construction process.

So, if we understand better the underlying causes of current and then future, I think we can plan better and the projects that we are planning will be more helpful to cover all of those scenarios.

So, thank you very much. Appreciate being here.

David Meyer: Thank you. Let me turn next to Angela O'Connor from the New England Power Generators Association.

Angela O'Connor: Thank you, David. And it's a pleasure to be here this morning to talk to you about this important issue and energy challenge from a generator's perspective. And I have to say the caveat that I am not a technical person as I sit amongst some very smart, technical people. That's not exactly what my role is here. But let me give you a little bit of background as to who the New England Power Generators Association is.

But first I really appreciate again the opportunity to be here in the role of the Department of Energy in providing this congestion study as directed in EPAct '05.

The New England Power Generators, or NEPG, as we affectionately call it, since we do so have acronyms in this industry, is the largest trade association representing competitive electric generating companies in New England.

Our member companies represent a diverse portfolio of generating assets in the region, and our mission is to provide sound energy policies which will further economic development, jobs, and a balanced environmental policy. And we believe that competitive markets are the best means to provide the long-term reliable and affordable supplies of electricity for consumers.

I could almost say, based on the very interesting discussion, the first panel and then so far with this panel, yeah what they said too, but I will make a couple of -- I'd like to focus my remarks in a couple of areas that will likely reinforce some of what you've heard.

I think first, and you have heard this, that we need to identify the problem, exploring and analyzing market-based solutions as was suggested from my colleagues in the New York ISO a few minutes ago. And recognize regional differences, that one size does not fit all, as you hear from all areas of the country as you perform these workshops.

I did, as John Keene did, my colleague from Massachusetts, had an opportunity to listen to some of the other regional workshops and found myself agreeing in a number of points that were made by the commissioners from both Arizona and from California.

Congestion in the electric system is a signal that there is a potential need to build infrastructure. From the generator's perspective, we recommend that the Department of Energy clearly define what the cause of the congestion is, and you've heard that, so I guess I'm reinforcing that particular point in the most appropriate and transparent analysis.

Is congestion the result of inadequate transmission, an outdated distribution system or lack of local generation, or generation generally? Commissioner Brown, I thought, provided a very important point on congestion this morning that I would also like to strongly reinforce. And that is to be sure that alleviating it maximizes the benefit to consumers. And also his point about what is it actually costing people? I think that's an important factor in your analysis.

Additionally, the discussion should be driven by the need for reliability. You heard that earlier and that was also reinforced when you were in San Francisco with that workshop. The most efficient use of the grid and the most cost-effective again, solution for consumers.

I defer to the planning experts that you've heard and that you will hear on the remainder of this panel to define what the analysis. We had a very good discussion earlier about the different studies that are available. And I think we concur in addition to the study that Brian Forshaw mentioned on SCM that would be helpful for the Department of Energy to take a look at.

But we do suggest that both the Department of Energy and policymakers include in all of that analysis all options to reduce congestion, including, where appropriate, a more cost-effective generation or non-wire solution.

I would also reference the recent energy bill in Massachusetts for looking at opportunities to minimize siting challenges and take advantage of existing Brownfield sites, since we do seem to have some siting challenges in New England in some areas.

As you have heard, there has been considerable development and activity in transmission and in generation in New England with more planned. New England has a robust stakeholder process and having participated and survived, consider myself a survivor of LICAP, it's not always pretty. But it has been very effective for our region, which arguably I think is unique in New England.

As a region we are working through the stakeholder process to deal with. You heard a little bit about interconnection. You actually had -- Commissioner George had to leave, but you have all three of the chairs that are chairing this stakeholder process on interconnection and as we look to adapt that to the Forward Capacity Market. And we look forward to a filing in October to the Federal Energy Regulatory Commission to deal with interconnection.

The New England power generators agree with our state regulators and many of the folks that you heard today, that the Department of Energy should take into consideration the regional differences and provide support as appropriate to our well established process. And be sure, as Lisa Fink suggested from Maine, that the states and parties have access to the assumptions and understanding of what goes into the development of the plan. Again, I think as was suggested on the earlier panel that for people to provide validity I think to the plan, there has to be a transparency and an understanding of what assumptions and analysis went into it.

And with that, thank you again for the opportunity to speak today.

David Meyer: Thank you. Let me ask next, Steve Rourke of ISO New England to speak.

Steve Rourke: Thank you, David. And, again, this is Steve Rourke with ISO New England. I do want to thank the Department for the opportunity to participate in the workshop here. And we want to welcome you to New England, not only to Connecticut, though it is always good to be down here with Chairman Downes.

Since the passage of the Energy Policy Act in 2005 and the issuance of the DOE's first congestion study in 2006, New England as a whole has continued to make significant strides toward building new infrastructure. A lot of market-based supply-and-demand solutions have come forward, as well as getting significant amounts of regulated transmission built.

ISO New England and the stakeholders in the region, and I do want to pause here a minute, because though it's not a huge group here, we do have folks here who are transmission owners, folks here who represent the generator owners in the region, folks here from public power. We even have folks here who trade power from Hydro Quebec. And four of the six states are actually in the room.

Now, that may speak a bit to the fact that we all have a little bit of New England town meeting goer in our gene pool, but it is how we do work. And really have worked with all the stakeholders here in the region to introduce not only enhancements of the planning process here in the region, but also to the wholesale markets that keep New England on a path to meet mandatory reliability standards and ensure resource adequacy for the region, both today and going forward.

To that end, I did want to offer some examples of how we're getting things done. The new Forward Capacity, which went into effect this past year, our first auction, has resulted in commitments for 1800 megawatts of new resources to come online by the year 2010. Two-thirds of those are for new demand resources that are coming forward. The rest are for supply and new generators.

The show of interest for auction number two, which we're going to run at the end of this year is also very robust. The results of the first auction not only show that new resources are coming forward to meet our energy and capacity needs for the region, but they're also coming forward in the right place with the majority of them in Connecticut and Massachusetts.

Since 2000, when the ISO was granted the authority for regional system planning by the FERC, the ISO has identified needs in each of the six states that has in fact resulted in transmission projects going forward in all six of the New England states.

We've completed major 345 lines getting built and new substations in Connecticut, Massachusetts, Vermont and Maine. The project in Maine, in fact, is a new interconnection to New Brunswick, which has raised our ability to import power from Canada as we think about some of the Canadian plans for increased wind and hydro resources going forward.

Since 2002, more than 200 of the projects that have been identified, some of them are large, some of them are small, have been placed in service and they total more than $1 billion in new transmission investment for the region. And it really is the first significant amount of investment in transmission for the region in really the last three decades.

You've heard from Brian that we've not only gotten that transmission built in, but we've identified a great deal more of transmission needed for the region. We have an additional $6 billion of new investment that we believe will be constructed in the next decade to meet the reliability needs for the region.

John Buechler and Phil Fedora earlier both gave you a lot of the details of the work that the ISO does with its neighbors through NPCC and with the other ISOs and RPOs doing joint plannings for the region, so I won't dwell on those here.

Maybe then to start to focus on some of the details for New England. And it certainly makes sense that we're meeting here in Hartford as Connecticut and Southwest Connecticut have historically been a major area of concern for the ISO, for the DOE, for the FERC, and for the region.

The good news there, and you heard from Laurie and you heard from Chairman Downes earlier, there has been a number of developments in Connecticut since the last congestion study came out from the Department that have improved things a lot here in the state of Connecticut.

The Southwest Connecticut loop, the new 345 loop into Southwest Connecticut has seen its first phase, go in service. It has been in service for over a year now, and the second and final phase of that loop we expect to be in service early in 2009. And once that's finished, it's really going to address one of the biggest needs that we had for reliability concerns for the region.

I believe as Chairman Downes said earlier, almost half of the resources that have come forward now as for demand response for the region have showed up here in Connecticut has also made a big difference for the operability of Connecticut as a whole, but specifically for Southwest Connecticut.

This development as well has helped with the congestion, which certainly has been significant in the state of Connecticut for the last few years. You've heard stated here and it's true, in the LMP we've actually observed little congestion this past year for the region.

Going back to the issue you raised on trends for the first panel, I think one of the advantages from the markets is that the markets have been able to highlight where in fact there has been reliability needs for new transmission or new resources to come forward, and I think John Keene said it well.

I think if you look back at the trends and then you follow the path to where new transmission has been built, where new generators have come forward and when the demand resources have come forward to the region, we basically solve those problems. They were identified by the market and now we're building our way through them.

We aren't finished and I think that's certainly very fair to say that we're not finished, but we've made some great strides there.

As noted by Brian Forshaw when he spoke, not all of the cost to consumer is caused by the need for transmission show-up in the LMP. There is oftentimes where we need to run generators out of merit to protect for certain contingencies in areas where you don't exhibit their out of merit costs in the LMP. But those costs in fact are very real to the folks who serve load. And the RSP which we put out, the regional plan the ISO puts forth each year has plans in it to address those needs going forward.

I did speak of the RSP. We will put that out each year in October. We actively work with the Planning and Advisory Committee during the year. We meet about once per month. Some months we meet two or three times, depending on the level of activity. But the first draft of the RSP will actually be mailed out to the pack and we'd be happy to share that with the Department at the end of each month.

To that end, we will be holding our public meeting on RSP '08 on September 4 in Boston, and would invite you to attend that meeting as well.

We do the planning, and we certainly work with the stakeholders in the region to do the planning from the ISO. But the states do play a real critical role in this. Really, without their help, without them being engaged with us, we wouldn't have had the success we've had getting new transmission lines sited, new generators sited coming forward. So, that process has worked well.

We do try to be as transparent as we can doing transmission planning going forward, really in the spirit of Order 890. As I said, we do issue the Regional System Plan each year. We update the project list with all the transmission plans that are part of the RSP three times a year, and we certainly share those with the stakeholders. That is information that's available on the ISO website and certainly be glad to share that with the Department.

One of the keys and I think you'd certainly hear this from the transmission owners. One of the keys to getting transmission built here is we actually do have transmission cost allocation in place for the region that has been approved by FERC. And really for the most part, to the extent the ISO has identified plans that are needed, to provide reliability for the region, the costs of those projects going forward get shared by all load through the region.

We've talked a bit, you heard from John and others, about the economic planning studies going forward. We have responded as a region to FERC Order 890, and are now in the midst of conducting three economic studies here for the region at the request of our stakeholders.

I think the major theme of those is how do we reach out to remote wind, biomass, maybe hydropower from Quebec or New Brunswick, and bring that power into the region both to help with economic cost issues and also the environmental issues that are faced by the region. And we'll continue to update the Department on the progress of those studies.

So, to close with, things are going forward here. The ISO continues to work with the stakeholders on the planning process and the development of markets for the region. We believe the markets are working well in conjunction with how we do our planning going forward, to bring forward not only the transmission that's needed, but the new generation that's needed, and new demand resources that have come forward. And we've seen that congestion has been reduced over time.

And to that end, we'll keep doing work certainly with people in the states with the Department and others to meet the electricity needs for the region. Thank you.

David Meyer: Thank you, Steve. That was very informative. Let me turn next to Mary Ellen Paravalos from National Grid.

Mary Ellen Paravalos: Thanks very much, and thank you for having me here today. I'm happy to be here. For those of you who may not know National Grid is an asset owner in both New England and New York, and owns transmission and distribution in FERC load and provide energy

efficiency programs and demand management as well. And so are very obviously interested in support of solving some of the energy challenges that we're looking at here today.

At this time around for the DOE effort, which we support very much, this increased urgency to address the energy challenges, and folks have been talking about this earlier today. And the DOE is charged with key aspects of the provisions of the EPAct, which focus on a national perspective on the need to relieve electric transmission constraints and congestion.

And so since the last study, certainly a heightened focus on mitigating greenhouse gases, increased demand for energy, increasing energy prices, all in the context of a very challenging economic overall situation and one that's going to continue for the foreseeable future.

We urge the Department of Energy to fully consider the language of the EPAct, which directs it to focus on energy policy in the areas of supply diversity, energy independence of the U.S., economic vitality of geographic areas and constraints on electricity. These are all wordings from the statute.

The DOE study plays an important role in informing regional planning and state siting processes does not take the place of it. We feel like the DOE Congestion Study has and will raise awareness on solving constraint particularly of a regional and interregional nature. So, let me just give you two examples and at least Don has referenced some earlier today.

Take our HPDC line to Canada imports low cost, low carbon hydro from Canada, 2000 megawatt intertie on an hourly basis. It is significantly restricted in the amount of power it can bring in from Canada by constraints that are located in New York and PJM, and so there's up to 600 or 800 megawatts. So, we're talking about a large restriction here. And this is something that clearly speaks of current congestion issue, one that is interregional in nature, and one that I think folks -- it's worthy of our continued awareness and focus on to address.

Another example is with regard to the generation in New York City and Long Island. Much of this generation is forced to run on oil for much of the summer because of constraints in the electricity system. It is to protect for the instance in which the gas system has a problem and to avoid the loss of load. So, here we're burning oil now instead of natural gas because of restrictions. New York City being right smack dab in the center of that corridor from New York all the way down to DC, another interregional issue.

We talked a little bit earlier about the value added of the DOE study, and I definitely see this as one aspect of it. It is focusing us on the interregional constraint areas. And when we do study the constraint areas, I want to echo some of the comments that were made before about making sure that we are considering all the cost for these constraints, not just the energy component of the LMP, but reserves, capacity market, and other costs as well.

And in considering the energy price effects of the constraints, to look to PJM and MISO, who have begun to factor in not only a production cost model for figuring out the costs, but also recognition of what the load or end consumers actually pay for this.

And so we would suggest that the PJM and MISO methodologies are moving in the right direction in that regard.

And certainly lack of access to low carbon energy sources and lack of energy -- I'm sorry, generation diversity, are likely to have an increasingly costly effect that needs to be considered.

In New York, in New England, on behalf of National Grid and my fellow transmission owners, we are busy making improvements to the system. Much of our focus is on replacing aging infrastructure, it is on making improvements to keep reliability, and the ISOs are busy, the PSC is busy, the siting processes are busy, and again the transmission owners are busy as well.

However, I suggest that across the country, and it's no different in New England and New York, that folks are struggling with how to ensure that bottled in generation reaches load centers, both existing and it will become more and more in the future as we will get remote renewable sources being located, we've got to get them connected. And so we have to have a focus on that.

I would suggest that this is also a potential value-added area of not only the DOE study but our efforts collectively. The DOE in its last study had a concept of condition congestion areas. These are areas where significant congestion would result, if let's say remote renewables were to be developed. And I would suggest that this needs to play an increasingly important role in our efforts.

We talked a little bit -- quite a lot, actually, about current congestion versus future congestion, and I, like Laurie, want to push back on I guess the popular opinion today. I don't think that the DOE looking at future congestion is redundant to the planning processes any more than looking at current congestion is redundant to the ISO planning and market processes. I think it's just what we have to do. It will take long-term planning to solve some of these energy issues, and it's -- transmission infrastructure is just part of the puzzle.

Transmission infrastructure can take years to put into place in that they have long lead times, they require long-term forward planning, ongoing and consistent support from government regulators and communities. They're a necessary part of the long-term solution.

Transmission does not take the place of energy efficiency, demand side management, distributed generation, new sources of cleaner generation, or smarter ways of operating the grid. These are all going to be needed.

So, DOE is focusing in on congestion areas and I would just urge them to do that, to focus in on that. Help us to set the framework for a focus area. I'm a planner and an engineer, and I know how technical and tough some of this stuff can be. But I don't think it takes a crystal ball or rocket science to figure out where some of these transmission upgrades are going to be needed. It just takes collective resolve and a bit of a plan. And I see the value in the DOE Congestion Study as being part of creating that resolve, which helps set the stage for the solutions to be ironed out at the regional and state levels.

And with that, thank you very much.

David Meyer: Thank you to all the panelists for some very thoughtful commentary. Let me say a few words here, and here I want to emphasize I'm speaking for myself. I'm not giving you an official DOE perspective on this. But I certainly can say that, well, this part at least is certainly a DOE view, and that is we are interested in looking forward. We realize that many people in this business have spent their working days and weeks looking ahead,

trying to see what the problems are that are coming in and how they are best dealt with. And that is especially true in the transmission area. I think because of the long lead times that are involved in these projects.

So, so far as my personal view on this stuff, I feel strongly that regional scale or even larger scale projection work needs to be done. But I have -- I'm coming increasingly to the view that DOE is not the entity to do those kinds of projections. We need an interconnection-wide body east and west to do that kind of work. And it should be done with the aid of a multi-constituency steering group that would provide advice, guidance, ideas about what are the scenarios of interest that ought to be probed here? And these projections should be done on an iterative basis. As most of you who are in the projections business know, there's a constant need to look now, but a year from now some things are going to be changed and it will have changed, and it will be necessary to take another look.

So, there is a need for this ongoing process, this ongoing tool that would inform us all and would enable us gradually to come to a more common view, more common understanding of what our resource opportunities are, what are some of the infrastructure projects that are going to be critical to using those, taking advantage of those resource opportunities.

And in the West, that kind of work has been underway now for several years, and it is -- I don't think we've gone as far as we need to in terms of institutionalizing it, but I think a lot of progress has been made.

In the East, the best example of this so far, I think, is this work that John mentioned earlier called the Joint Coordinated System Plan, and I want to emphasize that I think it's going to be too early to sort of look only at the results that come out of that study. I mean, these guys are going to produce two scenarios: reference case and then a 20% wind case. And the results will be interesting, but you have to distinguish here between the particular results of this analysis, the particular scenarios that they were looking at and the assumptions that were used, and all that kind of stuff. And think about, hey, this is a tool that can produce some results that can have very useful -- provide a lot of value for all of us.

And so we need to think about how do we do this better on a going forward basis? So, I just want to throw that out. That's my view on projections.

I want to get back to some of the dialogue here. Brian mentioned rising transmission costs as a component of the costs that consumers pay. And his -- when I get a little more detail from him and the rest of the panelists, because the sort of rule of thumb that I have been using for some time now about transmission is that it typically runs somewhere, say, between 5% and 10% of the cost of a kilowatt hour, delivered kilowatt hour is associated with transmission. And I want to see whether that -- whether people agree with that, whether they see major trends happening here, where that number would get significantly larger, and just get your perspectives on that particular question, and then I've got a couple more to raise.

Mary Ellen Paravalos: I'll just start. I don't have a percentage for you. Transmission costs --

David Meyer: Identify yourself.

Mary Ellen Paravalos: Oh, I'm sorry, Mary Ellen Paravalos, National Grid. Transmission costs have seen increases due to equipment cost increases, labor increases. I would also suggest, though, that prices across-the-board are increasing. The cost to [put in] generation is more

expensive. Fuel prices obviously are skyrocketing as well. This is a trend in general that costs are escalating. So, the portion -- again, I don't have a percentage for you, but the portion of the transmission costs increase, of course, needs to be weighed along with the increases of things in general.

Brian Forshaw: Yes. Brian Forshaw from CMEEC. I think historically, you're right, transmission has been in the neighborhood of 5% to 10% of the total delivered bill. I guess my only reason for bringing it up is that it is rising, rising significantly. And the trajectory, if you just look at the projects that are in the regional system plan, I think the transmission investment base right now in New England is around $2 billion, just south of $2 billion. Steve Rourke said over the next 10 years there's another $6 billion that's due to come in. Those are planning estimates based on what we know today. When the projects actually get finalized and hit the investment base, you don't know.

The load is the load. So, if you've got a rate and you increase the dollars and keep the megawatts and the denominator the same, it's going to go up. Again, I want to make clear, I'm not criticizing any projects, I'm not saying anything else. But it's a fact of life that the share, at least for us, the share of the total customer bill that goes through transmission has been increasing and it looks to us as if it will continue to increase.

Laurie Alysworth: I guess I would just like to add a couple of thoughts to that. I agree with Mary Ellen, you have to look at it in the context of everything in this global economy today.

But the other thing is, we don't have any really good basis on which to judge it. Yes, I agree with Brian, the cost of transmission infrastructure is increasing. That's because we haven't done anything for the last 30 to 40 years to strengthen our infrastructure.

So, when you say it's increasing, it's going to have to increase. I mean, that's just reality. We have to put money into our infrastructure. We see that throughout the country, not just in transmission but with everything. We're working with very old equipment. I mean, a lot of our equipment out there is 40 to 50 years old. Some of our conductors, you know, 2/0, 4/0 copper. You fly over it, you can't even see it.

And yet we live in a world today that is extremely reliant on extremely reliable power. You start looking at some of your big manufacturing, mostly any of your high tech industries. In the Stamford, Connecticut area we have major trading firms' headquarters. They cannot lose power for any amount of time without significant increases in cost.

So, the avoided cost of not having reliable power is what everyone feels is values the increases in the transmission infrastructure buildout that we see. So, I don't disagree, but I think there's a reason.

David Meyer: Others want to speak to this?

Angela O'Connor: I guess one report, and you're probably aware of it, so I apologize for the redundancy. But the FERC staff came out with a report a couple of weeks ago, actually, detailing very, very well, and it's quite bone-chilling the cost of infrastructure, both transmission and generation. But I think it's a very helpful tool. I mean, the line for copper literally just went straight up, and I've heard stories of it actually being stolen off of sites because of the incredible value of it. So, I think Laurie and the transmission owners and -- costs have gone up considerably.

But the one point that I would add that is slightly different, and it's obviously clearly in steel on the generation side to build any kind of power plant, renewable or otherwise.

But those costs tend to borne by the independent power producers where the cost of this transmission is all borne by the customer.

There has been some discussion about -- not to speak for some of my state regulator colleagues, but that with the cost overruns, and some are absolutely unavoidable, as both Laurie and Mary Ellen pointed out. The cost overrun, when they go back into their public utility commissions to recover those costs, which they most certainly have to, some of those costs, as I said, are unavoidable. But there has been some discussion as to possibly try to quantify or be sure that those are prudent cost overruns based on the cost of steel and other things.

So, that's a discussion I think that perhaps does need to be had, to be sure that the lines are being built, the necessary lines are being built as efficiently as they possibly can.

Steve Rourke: Steve Rourke with ISO New England. And certainly the New England folks here know this. I just want to share this with the DOE. One of the roles that the ISO has is to come up with a transmission plan that's a backstop on getting transmission built when it's needed, when liability concerns come forward. Hard-wired, though on our tariff and maybe to Angie's point which she just made, to the extent that the market does step forward, and we certainly saw that with the results of the first auction for the SCM, where we have new generators coming forward in Massachusetts and Connecticut, where the load is. New demand response and energy efficiency coming forward in Massachusetts and Connecticut, where the load is. We use those results from the market as a feedback loop into how we do planning with our transmission owners going forward.

So, to the extent that the market takes on that risk, as Angie just said, the new power plant owner wants to build in Stamford, which certainly helps Don, as an example. We may be able to defer the line for a year or two or five, or even for a long time. So, really, given the signals from the market and the need to get new transmission built, we should find that balance point and what's the best way to get this done going through time.

To Laurie's point, we are trying to get caught up with transmission getting built, and that's true in all six states. It's not -- it wasn't just Connecticut or just Massachusetts. We've got huge plans for new transmission.

As an example, right now for the state of Maine going forward, we just finished new 345kV lines being built up toward the Burlington area in Vermont. But over time, for that feedback loop from the markets to the transmission plans should find that point where folks are willing to take risk in the market. And then when they don't new transmission needs to come forward to kind of fill the gap.

John Buechler: David, if I could just --

David Meyer: Sure.

John Buechler: To follow-up to Steve's comment, maybe just a short elboration on some of my operating remarks with regard to this issue and with regard to the NYISO's planning process. We've been talking here in this last discussion about basically regulated transmission passed on to rate payers. And just the New York ISO planning process is a, I think, substantially different one than New England and other ISO planning processes, where the outcome is not by definition transmission. The outcome is identification of real liability needs and, as I mentioned, an explicit preference for market-based solutions, whether they be transmission generation (inaudible) response. And at least so far that process has been working and we've received more than sufficient market-based solutions to meet the identified reliability needs.

So, if that continues, and I refer to the comments of National Grid and Northeast Utilities, we certainly recognize the efforts of our transmission owners in what they're doing, in what their local transmission planning, and with replacing of infrastructure and so forth. And those are happening and they need to continue to happen. But at least looking at the bulk power system going forward, which is the ISO's responsibility, so far we're getting the market-based solutions, which at least remove some level of risk from the ultimate retail rate base.

David Meyer: Okay. Well, thank you. Another question that I wanted to raise with you, this is one that I would have asked the first panel except that we ran out of time, that is it's possible to argue that with some of the major changes, particularly price changes that we are seeing now, that there are shoes hanging in mid-air that haven't fallen yet? I mean, it's back to the question of is the future going to be different from the past? That is short-term price elasticities are notoriously low, whereas, if you look at things from a longer term perspective, there is more flexibility there than may first appear.

So, that means that when we're talking major price increases and certainly we've been seeing them and it appears that they are going to continue, it does at least raise the possibility that there are some major shifts in process here that we need to be thinking about.

So, having a number of highly technical people here on the panel, I wanted to ask them what are your views on this? Is it something that you and our colleagues are studying, or have you seen early signs of this yet, or just what's your view?

Steve Rourke: Let me start, David. Steve Rourke with ISO New England. We update our 10-year load forecast to each year and we would normally do that in the early spring. So, sort of the very quick rise up the last couple of months from oil, let's say $100 a barrel when we did our load forecast back in the spring, now to actually I think it was down to $134 today. That sounds like good news, but we actually did see a drop when we started to build in some of the economic factors toward long-term load forecasting model.

If we think back a year, what we thought was going to be the peak demand for the region in 2016 now has slid out to 2018. So, our peak growth let's say a year ago, year and a half ago, we would have thought would have been on the order of 1.8%, 1.9% per year. We're seeing that down to at least earlier this year when we ran our models down to roughly 1.5%, 1.6% per year. And certainly less for energy growth. Our peak for the region has been growing faster than energy.

Our energy growth for the region, if, again, if you were to dial the clock back about 14 months, we were looking at roughly 1.2% per year growth on energy, and that's back early this year maybe like 0.9%. So, we're starting to see it dampen. We update that load forecast each year both based on our actual experience that will come out of next year, and new economic data, new demographic data for the region, all that are inputs to our load forecasting model.

So, we are seeing really in large part the impact of cost of energy starting to drive load down.

David Meyer: Let me -- I want to get reactions from others on the panel as well, but let me say that according to our schedule, we should break off panel one here and go to statements from individuals. But so far we don't have very many people who have come forward and asked to have that opportunity. So, I think we've got the opportunity here to talk a little further with this group.

But let me ask the audience again, if you do want to make a statement, the opportunity is there. All you have to do is let Lauren Giles know. Lauren, raise your hand. So, if you do want to, please do that and we will find time for you before we break.

All right. For a while at least, we will continue with this panel. So, now back again to the question of dealing with changing elasticities.

John Buechler: John Buechler, New York ISO. I remembered that time. I think I would agree with Steve's comments over there, that certainly our forecasting models be longer in forecasting models using econometrics and recognizing that the high run-up in fuel prices certainly affect many sectors, and then come back and affect the net electric demand. We've seen similar trends ourselves right now. So, I think in general that ISOs and utilities use similar kinds of longer term forecasting models and utilize data input from national sources and so forth as well.

David Meyer: Let me hold your feet to the fire a little more on that, because I can see how you might say, well, yes, we have short-term elasticities in our models and we have long-term elasticities in our models. And if we see major price increases, then over the longer term, over a five-year period or so, 10-year period, we would expect to see a significant response.

But my point, one of my points here is that we're in uncharted territory. We don't see these kinds of price increases very often. And so this is a test of how accurate are our assumptions about price elasticities anyway? So, how do you cross-check those assumptions that you're using and make appropriate updates?

John Buechler: Well, that's a point well taken, David. This is John Buechler, New York ISO. I guess we'll have to see. I mean, you're right, we're in uncharted territory. What everyone thought was really horrible increase in oil prices back in the '70s. We've trumped that many times over just in the past year, less than a year. I don't have a definitive answer for you. I think we'll have to just do the best we can going forward, as we've all tried to do.

It's not just ISO, it's not just the utilities or oil serving entities. I think you've got a number of people, yourselves at the Department and a number of people at governmental levels, I hope, that are also trying to sort these things out.

Steve Rourke: David, thanks. Steve Rourke from ISO New England. Thanks for asking John first, actually. It's hard, because you're right, that these costs are quite extreme and it isn't clear yet how our models are going to deal with this.

John's point, though, and I think it's a very valid point, we do have some history to fall back on. We clearly have the embargo years from 1973, '74, then again in 1978, and then again in '83, '84. I remember that trends back from '83, '84, where the early '80s high inflation rates, very little low growth for the region. In fact, it was pretty flat for three, four, five straight years. Then I remember May of 1986, when oil went from then the astronomical roughly $45 a barrel range to $8 in about four weeks. Load grew like crazy for the next three, four or five years.

We were actually short of capacity for the region by 1988. Thank goodness, along came big, large new units like Millstone 3 and Seabrook and the interconnection to Quebec, or things would have been quite bad here really for the region.

So, I think we can learn a bit from the past. I don't know that oil is going to drop back to the equivalent of $8 a barrel in 1986, but we will clearly need to watch this going forward. It is going to be a challenge.

Angela O'Connor: Just a point, I guess. What we're hearing from both the ISO -- oh, I'm sorry, Angie O'Connor from new England Power Generators Association. But I guess it reinforces the comment that we heard earlier from Garry Brown about looking and trying to do forecasting too far ahead, because that could really increase cost to consumers unnecessarily with these changes and the difficulty in really projecting. So, I think at least what I heard certainly does reinforce what we heard from Garry Brown and from these ISOs.

Laurie Alysworth: Laurie Alysworth with Northeast Utilities. As important as fuel prices are to load growth and load growth is, as far as the driving reliability project, I think one of the challenges that equal that in trying to forecast how that is going to impact us is also the challenge of how legislation is going to impact us as well with regard to renewables and carbon-free.

This is a whole new world as well, and not only is it a new world in a sense of driving the need for infrastructure that is not related necessarily to reliability, to load growth, but by legislation. But also in how and where the generation is located. And it changes how our transmission system, delivery system works when it's not --. Let's say we have 100% -- this is not Connecticut -- 100% local generation, and all of a sudden we have to supply 20% to 25% of that from far away.

How our electric system is designed right now is for that 100% generation being local. That's not the case, but it's designed around our existing generation. And if we start moving further and further away, it just changes the whole world that we're living in.

So, we've got to be careful not to be short-sided and just concentrate on the fuel price impact to looking forward. Because we've got the perfect storm going on right now. We've got a lot of things going on.

Brian Forshaw: I want to take off a little bit on Laurie's point. I think the first element is what's driving customers is not the transmission piece of the bill, it's not the energy piece, it's not congestion. It's the total bill that they get. And that's got a lot of factors that go into driving costs up.

I think one of the things we're seeing now, though, is there's a little bit of a tension in play, at least in New England, with the Forward Capacity Market, that there are opportunities for demand programs to be in the market and get paid explicitly in capacity payment for that. And that has value and it's certainly something.

But I think with all the other costs that are going -- cost increases that we're seeing, there's also a growing trend that -- and I don't have any statistics or anything else, it's more just calls from customers, literally. Is there anything we can do that's behind the meter that, I mean, from installing 500,000 compact fluorescent light bulbs to replacing motors and pumps with variable speed drives and the like?

A lot of that is not right in front in terms of obvious to the ISO or to the market. It's behind the meter, but it's still going on and it's going on in a coordinated and relatively rigorous fashion, but it's not focused on the energy market or any of the other individual pieces. It's just customers trying to reduce their bills.

Garry Brown: I'm sorry. Garry Brown with the New York PSC. And where it's going to happen, I think, is not the normal elasticity of demand, which is where I think everybody's been focusing on. It's going to be governmental intervention and government programs.

And you've already seen the markets change because of the renewable portfolio standards established in the states, where things that may not have been built under normal conditions because of government incentives are getting built and therefore it's changing the whole transmission grid.

And I think you're going to see the same thing in energy efficiency. New York and a lot other states are starting to implement a very aggressive energy efficiency program. Now, until we get those programs in place, the ISOs aren't going to just assume that we're going to be successful. And I can understand that.

But assuming that as we spend our several hundred million dollars a year behind the transmission line incentives for Efficiency Energy Conservation Demand Side Programs, it will be affecting. And if we're successful, for example, in reducing demand by 2015 by 15%, or New Jersey, 2020 by 20%, if those things are successful, then it does change the forecast, that if you want to look forward and if the ISOs want to look forward, where we're really heading.

So, I think it's less elasticity, more how the Government steps in or T. Boone Pickens steps in, or whoever is going to step in that's outside the market, it's going to change the future.

David Meyer: I would agree that as we add more moving parts to this process, the projection part gets more difficult and that's clearly what's going on here, yes. But nonetheless, the underlying importance of looking ahead is still there. So, yes. Right. Lisa Fink has -- is she in the -- oh, sure.

Lisa Fink: I added my name to the list. I don't need to step in, but I will if you --

David Meyer: No, no. You wanted --

Lisa Fink: Okay. I actually did have a question. One is about the looking towards the future, I was a little confused, David, by the -- and I understand it's your view and not the Department's view -- but in the handout that the Department said the DOE expects to focus chiefly on the analysis of recent or current as opposed to projected electric transmission congestion. And I think a little bit of what it may be confused and it may not be, but in the discussion that's been going on here, I think we haven't distinguished so much between what the congestion study will do and what the planning that the regions will do, the inter-coordination, and the interest we all have. And obviously knowing that the ISO planners have to look ahead, and they do, and I guess I was just -- one of my questions is just checking in. And when you speak of having to look ahead, is that sort of more in the -- DOE does a lot more than congestion studies.

David Meyer: I think that's exactly right. I mean, we have an assignment from the Congress to do a congestion study, and so the issue is what things do we -- what things fall within the scope of that study, and what other things are important and require attention from the Department, but not as part of the study?

Lisa Fink: And the second question or sort of clarification is the definition of congestion, and a lot of folks have been talking about, well, there are a lot more costs to consumers besides congestion costs. And I agree with that. I think that's very true. But I think there's a narrower question for DOE again, which is, is there congestion? And then there are

questions for the planners and the market in terms of cost to consumers and where do they come from and how do we solve them? And I think this comes up, too, in the context of renewables. Yes, there are issues about renewables. We're not talking about congestion here; we're talking about policies and how do we solve them? And obviously DOE has a strong interest in this outside of the congestion study.

But I guess as we're meeting to talk about what's going into the congestion study, I think maybe a note of caution in terms of defining terms and looking at the scope of what the Congress said to do is worth stepping back from it and saying, well, you look at congestion first. If there, as the DOE defines it, persistent congestion, then DOE makes some policy determinations that are listed in the statute to determine if there should be a designation.

So, it's not sort of a let's solve all the region's energy problems through the congestion study; it's narrower than that.

David Meyer: Okay. I think we will have one question here. Is your question pertinent to this particular panel discussion, or are you Bob Stein, by chance?

Bruce McKinnon: No, no. My name is Bruce McKinnon, and I represent the Mass Municipals. And it's somewhat of a culmination of several points that were made by other people that I sort of was wondering how the report will evaluate these things?

And the point that I'm trying to make is the fact that we here in the Northeast are interacting with another nation. And a lot of the congestion or potential congestion is, I won't say the result of, but affected by, the interaction with that other nation on an electric basis. And, as Mary Ellen indicated, we're having a potential congestion problem in New York and Pennsylvania, but I won't say it's caused by, but it's affected by the Canadian resource that is constraining, shall we say. Okay.

Similarly, out in the western New York area, we have a situation where, again, the interaction of Ontario affects the congestion in the western New York area by the fact that there is choices being made in terms of -- international choices in terms of power either going into Detroit or coming into Buffalo, and those kinds of things.

My point is, I think the scope of what affects us goes beyond the geographical U.S. territory. I was hoping that there would be an attempt made in this study to look at these ancillary problems that are being caused or being affected by our neighboring systems. And so therefore I was hoping that that would be part and parcel of the message you take away from here.

On another point, you were looking for data sources, and everybody sort of focused on the planning website activities. But there are some very prominent monthly updates that are prepared by both the New England ISO and the New York ISO, in terms of monthly reports of, in one area, congestion and uplift, and those kinds of things. And I would commend to you the review of those sites which are, in essence, the basic points that the market monitors also review in their annual reports.

But here you have a month-to-month snapshot of those kinds of activities, and I would commend to you that that would be another source of data that should be factored into your review. And that completes my points.

David Meyer: Thank you. Well, I will declare this panel at a close now. Thank you all. And we shift now to comments from individuals who at least one of who has not had an opportunity to speak. Please identify yourself.

Bob Stein: Yes, I'm Bob Stein and I'm the real Bob Stein. Bruce and I worked together in another life many years back. I am an independent consultant to Hydro-Quebec US, but I will say I think my comments mirror their beliefs and policies, but I am not representative of them directly.

I'd like to thank the DOE for holding this conference and, as many of you know, a regular attendee at stakeholders, I'd also like to thank the DOE for making sure that we don't overeat at the meetings, as we often do at the NEPOOL meetings. The water was really good today.

Many people talked about transmission system and the need to upgrade it and so forth, and I certainly agree with that. Flexibility is key and we've heard the people talk about the need for more transmission and where it's needed.

The southwest Connecticut loop that's now finally being constructed was on the drawing board when I first started at NEPOOL in 1971, and partway along the way it was going to be replaced by, I believe it was a 600 megawatt coal unit in Stamford. So, you can generation at least sometimes is considered an alternate to transmission.

I also seem to recall, I'm looking at Steve. Connecticut was export limited at one point in time. Is that correct?

Steve Rourke: Yes.

Bob Stein: So, we see another change. Two nuclear units were shut down and now we're worried about Connecticut's import limits. So, for somebody who represents a seller into the market and other generators, a robust transmission system is absolutely key.

I will look into the future and comment that demand response actually might increase the need for transmission as older central stations don't clear and the more remote generation does clear in the marketplace.

So, DR conservation, whatever, that reduces load may in fact increase the need for transmission, which isn't a bad thing but something to be thought of. Similarly, plug-in hybrids may increase nighttime load. And if you plug them in during the day, maybe peaking generation. So, we have to think about a whole new way of looking at load and generation perhaps in the future.

Two things, I think, remain to be solved in the markets. The markets have worked well. I agree with the comments on the markets working. There was a period in time when we thought that must run generation was an economic alternate transmission, and because it was all done through one company and one group of customers, we could make that determination and make it happen. And we used to have must run by design units. I think the Boston one or two were -- one of them or two of them that were designed to be there and consciously there rather than transmission, which was thought to be more expensive.

And putting that scrambled egg back together again is a huge challenge, it seems to me, to try and figure out whether generation in some locations could be a better alternate to transmission. One is socialized, one isn't, and becomes a terrifically difficult problem to solve.

Also, I guess respecting that Hydro-Quebec is my client, I want to comment on Mary Ellen's point about phase 2 with the VC line with Quebec. We have a 2000 megawatt

line, which is routinely limited between 1200 and 1400 megawatts. We are looking at increased connections to the green energy.

By the way, Hydro-Quebec, I believe, is one of the few, if not the only non-carbon emitting electric utility. Virtually all of its energy comes from hydro and soon to be wind, and I would also mention that their residential rate are about $0.03 per kilowatt hour, Canadian, which used to mean lower, but I guess it's higher now.

Unidentified Speaker: $0.38 per kilowatt hour

[Laughter]

Bob Stein: Is that the Connecticut translation, $0.38 American? So, if we're going to be building new transmission to Canada and we don't solve the 1400 megawatt or 1200 megawatt limit, we will be limiting a new generation of transmission lines to 1200 or 1400 megawatts.

So, it isn't just the 600 we have on the table now, but it's potential 600 or more of the next generation of links to the north, where in fact they may be economic renewable resources. So, that is a very easy to see for me interregional problem, and I think solving interregional transmission issues is the other big part of the puzzle.

We've done a very good job in New England identifying transmission needs in New England and beginning to work on them. They're expensive. They haven't been built for many, many years. I will note the transmission between New England and New York is the same two 345kV lines that were there when I started working in 1971. The load has gone up about 2.5 times in New England since then.

So, one would wonder if there isn't a way to solve these interregional problems where an investment in New York increases transmission capabilities in New England. Increased transmission between New England and New York allows for increased trading, if you will, between New York, New England, and other parts of the country.

So, with that, thank you.

David Meyer: Thank you. Lisa, did you want to -- did you have additional things you wanted to say? Okay. Last chance, anyone with individual statements? Hearing none, we will declare the workshop closed, and thank you very much. It's been an interesting discussion and we've gotten a lot of useful ideas from it.