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

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Transcript

David Meyer: Well, good morning, ladies and gentlemen. I'm David Meyer from the Department of Energy. And I welcome you to our workshop on our 2009 congestion study. Before I get started in a brief presentation, I want to introduce some of my colleagues here. Lot Cooke, who's not at this table presently, but he'll be here shortly. He's from our general counsel's office. Peggy Welsh is from Energetics and has helped us organize the workshops. We have Elliott Nethercutt, also from my office. He's helping us with some of the arrangements here. We have Joe Eto from Lawrence Berkeley Laboratory. And somewhere in this area is Alison Silverstein. She'll be here in a few minutes also. And I'm sure many of you know Alison from previous work that she has done.

So we will get started now here. Briefly, the Energy Policy Act of 2005 directed DOE to conduct a transmission congestion study every three years. And they have asked us to do the first one and to issue it in August 2006. And we did that. And so we are now preparing for the study to be issued in August of 2009. And this is the sixth of these regional workshops that we have held. And then, in addition, we are happy to schedule bilateral meetings with states or other stakeholders or virtually anyone who wants to come and talk with us about congestion matters. We'd be happy to talk.

The Energy Policy Act authorizes but does not require the designation of what we call national corridors, national interest electrical transmission corridors. So these workshops are focused on preparation of the 2009 congestion study and not on the designation of corridors. That is a separate and kind of follow-along process. So whether an incoming administration will choose to designate corridors is not something that we can anticipate at this point.

And so we are holding these workshops to receive or request information to assist us in preparing the 2009 study. And we are seeking data that we should consider with respect to transmission congestion. And in particular, we are looking for information or data that will help us assign meaning and significance to that congestion. And we want to be sure we distinguish between technical limits on line loading and the effects of possible contractual arrangements that would make it difficult to use some of the capacity which is there.

The 2009 study will focus only on recent or current congestion. In the 2006 study, we did do projections for the Eastern Interconnection for congestion and Eastern Interconnection. And we are not doing projections as an integral part of the congestion study this time around. That doesn't mean that we don't have an interest in projections; we do. And so we will take an interest in projection, even though they're not an integral part of the congestion study.

The Energy Policy Act excludes ERCOT from the study focus. And as in 2006, we're going to address the two Eastern and Western Interconnections separately. And in the west, we're working with the transmission expansion planning group under WECC called TEPPC. And in the east, LBL, Lawrence Berkeley Laboratory, has engaged a contractor now that will help us to review recent historical data on congestion.

So today we will hear from two panels. And I will ask each panelist to make a very brief opening statement. Sort of put your basic cards on the table of what your basic position is regarding transmission congestion in this particular area. And then we will go on to discuss some key issues or topics. And there will be an opportunity at the close of the meeting, close of the workshop, for non-panelists to make brief statements, if they wish. In any event, we invite all interested parties, whether panelists or individuals here or other organizations, to submit written comments and supporting information to us at the Website address shown there: http://www.congestion09.anl.gov

The 2006 study identified several areas in the nation as areas of concern from a congestion perspective. Well, part of the process here is to obtain focused information from panelists and others about what has happened in those areas or with respect to those areas in 2006. What are some of the recent relevant developments that we should be aware of?

And, finally, it's entirely possible that some new geographic areas of concern have developed over this period of time. So if you know of such areas or information that indicates that such areas exist, please let us know.

We, in terms of schedule and next steps-- we would like people to provide us materials that they consider relevant as it becomes available. So if it's already in existence, you can direct us to it. That's great. If it's something that's in preparation, let us know when it would be available. And we've sort of set an October 15 date as a target date. We would like to gather as much of this information as possible by October 15 so that we can start analyzing it in a systematic way. That doesn't mean that the window closes on October 15. But at some point in the spring, we will have to say - okay, we're closing the window.

So we anticipate that in the spring of 2009, we will be digging deep into this data and developing an outline of our report. And then later in the spring, we will draft a text. And then beginning in June, we will be engaged in an internal review process prior to publication.

So here are our Web addresses http://www.congestion09.anl.gov and information about submitting written comments. The discussion that we will have here today is important, and it will be informative, but I urge everyone to submit material in writing. It's that material that will be really critical for this report.

So if you have further questions or comments, please let me know. You can talk with several of us here, or we can talk later if that is your desire.

So, with that, I'm going to shift gears. And we will start with the first panel. The two panels-- the first panel is a-- we're going to address basic policy kinds of questions and issues with respect to the congestion study. And then the second panel will be focused more on technical kinds of questions. And so the people in the second panel will have an opportunity to talk about what the first panel talked about. So, with that, we will--

And let me ask Lot Cooke, our general counsel, whether he has any points he wants to offer here.

Lot Cooke: I don't think so, David-- other than to make clear that we have in all these-- we're here to discuss the 2009 congestion study and not the 2006 congestion study or the national corridor designations arising from that study.

David Meyer: Okay. Thank you, Lot. Now with my panelists chairman's hat on-- and I don't plan to go in any very systematic order here. So I'm just going to start with Commissioner Nazarian, and we will work down the table here.

Doug Nazarian: That's a good a method as any. Good morning, everybody. In Maryland, we haven't, at least in my time as the Commissioner, which goes back to the middle of '07-- we haven't studied transmission as an engineering matter so much as a supply and demand question. We, as some of you may know-- we're a restructured state, and in 2005/2006 timeframe had a very contentious or political situation around the removal of BGE's rate caps and the price impact to consumers, that event, which led to legislation that directed the Commission to prepare its reports to the general assembly ostensibly on whether or not to reregulate or how. But as a practical matter, those reports required us to address, comprehensibly, the supply and demand situation in Maryland. And the report, the interim report we filed with the general assembly last December is probably the best source of the state of the world in both transmission and generation in Maryland that there is. We will file, this December, the final report required by that 2006 legislation. that will update all that and address the transmission situation in the context of everything else we have going on in Maryland.

We sit-- most of Maryland sits in a transmission-constrained section of the PJM grid. The real action happens east of Frederick. And in terms of what hardware has gone in the ground or what has been done to address that, the answer is - over the last ten years, there have been a number of updates to the 230 kV level lines that run through the state-- but the real relief from our transmission constraints is going to come through the larger 500 kV and up projects that are in the works largely outside of our state - the trail line, the path line, and then another project that's at least in discussion that will cut largely through Maryland, the map projects, will sort of follow from those. But the real constraint that affects our supply and demand situation in Maryland will be relieved or not based largely on projects that don't hit our state - that travel mostly through adjoining states.

What else have we done? We don't have, as a state Commission, the authority to direct the construction of transmission lines the way we have the authority to direct construction of generation facilities. And we have a greater ability to direct our utilities and others to undertake demand response programs or other supply rather than transmission side initiatives. And so that's been largely the focus in our commission and how to address-- how essentially to work around the constraint.

And so we're taking a number of steps in that regard. We have legislation from our general assembly this past session that requires aggressive conservation goals. And we have our utilities preparing programs that we're reviewing now in that regard. We have also issued orders directing our utilities to provide us information, and we expect, later this fall, to issue an order directing them to prepare request for proposals to find or build some additional capacity. This all flows from back and forth we've had with PJM. In fact, Mike Kormos has been good enough to come down to Baltimore a number of times over the last couple of years and help us understand the gap, as we call it - the difference between the supply we have on our side of the constraint and what we need to serve the load and when that is going to become a problem.

It looks now, depending on which set of assumptions you want to go by, that either some time in 2011 or some time in 2012, we're going to start having real problems on hot

summer days in Maryland, unless we either get some transmission relief or we get some additional generation or demand response on our side of the constraint.

So that's the situation in Maryland. We are watching very closely to see the progress of the big lines that are in the works outside of Maryland. And Mike can talk better than anybody about the smaller important incremental steps that have been taken in the transmission systems within it separate from the big pipes that everybody else is watching. But I think we're getting to the point in Maryland where the smaller incremental steps are about running out and that without either some new generation on our side of the constraint or some serious demand response or conservation or one of these big lines coming from the west, we're going to have real problems in a couple of years.

David Meyer: Thank you. Mike Kormos? I will rely on you to introduce yourselves for the benefit of the people on the Webcast, please.

Mike Kormos: Okay. Thank you. I'm Mike Kormos. I'm Senior Vice President of Operations at PJM. And, again, also thank you for the opportunity to come here. I did provide some written comments, they were in the back. And I'll try to summarize those. And there is some tables and some Website links in there that may be of interest to people.

Overall, we do provide a lot of the information back to 2005 and 2006 on the existing congestion at the time. And we provide some updated information now and obviously some future work that we've done for our benefit. I think, overall, if I had to summarize that, congestion isn’t getting any better at PJM; in fact, if anything, it's getting worse. The numbers may not totally reflect that if you look at total congestion dollars. I think you'll see we've been reasonably consistent at about $1.6 billion of annual congestion across the PJM grid since 2005. We're on track with that as well this year. I think what that doesn't take into account though is that we've made a number of upgrades throughout 2005, 2006, 2007, and 2008, and up. Talk about some in specifically and, quite frankly, haven't been able to dent the overall congestion. It has stayed up at $1.6 billion.

And I absolutely agree with Doug, I don't think we will make any major impact in those kind of congestion numbers without some major backbone facilities, in particular I'm talking about ones we proposed as to what we would expect them to do. I think the situation has also been a little bit lucky. We were fortunate. We had a mild summer in 2008. 2007 was also reasonably mild. We have not hit a peak load since 2006. And I think that overall, again, is helping keep the congestion numbers down. But it doesn't necessarily mean that the congestion is getting any better.

The fuel prices, I think, are contributing. It will continue to make it worse, even when we start looking at coal. Eastern coal right now, because of transportation costs, is rising faster than western coal. That's, again, contributing to that higher congestion split.

One of the things I do get a little concerned about that I've heard in discussing congestion is sort of the interaction between reliability violations and congestion-- and one of the concerns is people are trying to artificially somehow separate those two-- that reliability is not a congestion matter. At least at PJM, and at least in my opinion, we've always felt they're explicitly linked - that congestion for the most part is just something that's going to happen before a reliability violation shows up. Congestion is simply not being able to import enough economically into an area, where the transmission system is not capable of bringing in everything that would be economic. The ultimate endpoint to that though is the reliability issues, where it's no longer an economic issue. We simply can not bring enough energy to serve the load.

What I think is unfortunate-- what I don't want people to lose sight of though - while we don't assign a dollar value to that congestion, I would offer that's probably the most expensive kind of congestion you could ever have on the system is if we went into voluntary load curtailment, rotating blackouts. So I want to make sure people don't lose sight of that because-- particularly in our future congestion studies, while we can project and try to project what the future congestion looks like, when we start talking, as Doug mentioned in Maryland, the risk of shedding loads, that has a significant greater cost than any kind of congestion dollars we could show you. So I would hope we don't separate those two and say we only look at congestion on an economic and not the reliability.

What we've actually done, and hopefully what the numbers will show you-- the congestion number by year we showed you. We've also shown you by transmission congestion type. One of the things I think I would show you, and I don't have an extensive list in the write up-- although, they are available on our Website-- of all the enhancements we've made. But one of the things I think it really does show that right now there is no magic bullet to solve the congestion. There is no one bottleneck that if you relieve that constraint, this all goes away. The fact of the matter is - the grid itself is at its max across the system from west to east. We can go in and fix and try to fix individual problems, but all we're doing is pushing sort of on a balloon here. And we'll push the problem to a different part of the system.

I think one of the easiest ways to show that is if you looked at the congestion numbers, there's a constraint called Bedington-Black Oak in the middle of our system - the western Pennsylvania, West Virginia, Virginia, Maryland area that has, since 2005, been our number one congestion. Basically about a $0.5 billion a year of annual congestion is attributed to that constraint. It's been number one. We did put in a major enhancement - the Static VAR Compensator - on that facility. That did, in fact, make that facility much better and did, in fact, relieve the constraint dollars on that facility and took it from $0.5 billion to a little over $1 billion, as of this year. So while there was a significant reduction on that constraint, all it really did was re-shift the order down to AP South, which is just sort of a parallel constraint to Bedington-Black Oak now is running number one and right now probably pushing close to $400 billion and will probably get very much up in there. And that's sort of the issue in our system right now.

Again, as I said, it's more of a network issue than an individual constraint. Because we've operated to the Bedington-Black Oak, we've masked the other constraints that are right there. They're right at their limit. Just the fact that Bedington-Black Oak hits first-- you go off calls for that one first. And but not-- you can't necessarily just fix that one and think the problems are going to go away. It will continue until we put some of these major backbone facilities in there. It will continue to be a problem. And I think we need to understand that you're not going to be able to go out and try to dredge. Even though we've listed them individually from you, this is major west to east problem on our transmission grid. Those numbers are there.

Again, knowing we only have five minutes. I won't go out into too much more. One thing I would say is we are right now undertaking-- and I know, Dave, you mentioned, you're not necessarily looking forward on congestion, although we do. We are making some projections. We've run, as part of our RTEP process that we call the market efficiency analysis that we do-- we have put out some of the results already for 2013, which is this year’s baseline analysis. And I think we're seeing some very good results there, in that right now our projections for 2013, I think, were in the $2 billion range for congestion on the PJM grid in the baseline without the current enhancements that we have proposed and approved by our board. When you put those enhancements in total, that congestion was reduced from $2 billion down to $250 million, at least on a simulated basis.

So, I think, again, you can see the major backbones will have the effect. But I think we are looking at being able to drive down that congestion. We're in the process of doing more refined and looking at specific projects, looking at specific areas. As that analysis finishes out throughout the year, we share that with our TAG Group or Transmission Advisor Group. It's also all posted on our Website, those studies, as they are completed. And we did put the link in the write up for you to look at. So, again, I would suggest at least that's another area that we see--

David Meyer: Thank you.

Fred Butler: Good morning. I'm Fred Butler. I'm Commissioner of the New Jersey Board of Public Utilities. And because of the misguided voting patterns of my colleagues, I find myself the first Vice President of NARUC, about to take over in November as President of that organization. But I'm here today representing New Jersey.

We have some serious concerns about this whole approach to congestion. I'm not going to go through all of my prepared speech. I will submit the remarks for the record. But I'll just touch on the highlights of this. Our first concern is that this report is due in August of 2009, right in the middle of a congestion period. And it's only going to look at what is up to and including that point in time. We think it ought to be-- imagine a report to Congress delayed. Maybe it could come out in the fall of '09 and talk about all of the congestion in '09. And maybe it also ought to look, as Mike Kormos mentioned, about some of the projects that are into place and that are going forward, including the five that have been approved by the board of PJM, that will, in fact, handle this issue. So my first suggestion is expand the report and send it to Congress in the fall of '09. I don't think they're going to really notice the difference.

New Jersey's known as the crossroads of the revolution, that's one of our nicknames. And we are not only the crossroads of the revolution, we have more battles fought in our state, which continues to this day. We still have battles fought in our state. And one of the battles is over transmission lines. One of the most famous battles, of course in New Jersey history, was the battle of Trenton where Washington surprised the troops in Trenton. We're hoping that happens again by the way next year when the troops from Washington will also surprise those of us in Trenton that are waiting to see what's going to be done about this congestion issue. New Jersey happens to be the only state that is entirely in a projected potential carta. The entirety of New Jersey is in that carta, we're used to that. We're the most congested state in the country in terms of population. We're the most densely populated state, and that means, in our state, whenever you dig to put something in the ground, you find something or somebody. We have that problem and we deal with it every day.

Not only are we the most congested state in the country and at the crossroads, but we're at the edge of PJM. And therefore we have another problem. And that is the seams issue between us and the New York guys. That is a major problem, ladies and gentlemen, because there are at least 3,000 megawatts of projected projects that will take power out of New Jersey and run it across the Hudson River or the northernmost boundary or cross the water into Long Island out of New Jersey and out of PJM into the New York guys. And there are very few rules that indicate how New York has to make up for that deficit. So that is a major concern of ours and we think that puts us not only at the crossroads but in the crosshairs of this issue.

Two well-intentioned but operationally different RTOs do meet at our border and the impact of that cannot be ignored. We note that during the western regional workshop for DOE's project here, the definition of congestion and its implications were deemed so

vital, we think that that's an important issue that has to be taken into consideration as well.

We have launched our own energy master plan in New Jersey. We've worked on it for over a year. It's in draft form. It's available on our Website. It will be in final form in a few weeks. And we have, in fact, looked at this issue. We have looked at how to do demand response to deal with the congestion problem, and deal with the match, as Doug Nazarian said, between supply and demand, which is what we kind of think about every day. We've looked at how to expand our energy efficiency programs, how to expand our award-winning net metering standards, and enhanced our solar energy program, which has the second most solar installations in the country. Let me repeat that. New Jersey has the second highest number of solar installations in the United States, after California. Who'd have "thunk" that? But we've done it. We've done it with some societal benefits money that we've collected from our rate payers. And we have now moved to a solar renewable energy certificate program that's going to be even more streamlined and more nimble to get these projects built.

So we view transmission, local generation, and demand response as three parts of a zero-sum game. The more transmission you build, the less there's an impetus to build local generation and then less pressure there might be to do demand response. The more demand response and local generation you do, maybe there's less need to build some of these transmission lines. However, we have done our part in terms of transmission. It's in our energy master plan and we've actually walked the walk. We are citing the Susquehanna to Roseland line as we speak. We are locating places where that will be built at some political cost, I might say, to the people in that densely populated state. We've built 235 kV lines through the state where they were needed and where PJM told us they were absolutely necessary. I did the public hearing on those, and I have the scars to prove it. I can tell you, it was not a popular thing. We are anxious to have the line come in from Calvert Cliffs up in through to Salem. So we're a part of this and we're going to do our part. But we also think it ought to be looked at in that tri-part type manner-- local generation, demand response, and transmission as well.

I think I will leave it there, except to say if we're going to have 3,000 megawatts of power go into New York, we might as well not even build the Susquehanna to Roseland line, we might just as well build it to Manhattan and be done with it. Why bother New Jersey? Just build it up to New York and then to Manhattan and be done with it and leave us alone. So we really have to deal with that issue that we're building transmission to get power into New Jersey, and then we're allowing it to go across the Hudson River into Manhattan. We're willing to do our part. We're willing to talk about cost allocation, John McKinney. We're willing to be part of it. But we don't want to see any free riders at the same time. We're at the crossroads once again. And as I said earlier, we hope that Washington surprises Trenton once again. Thank you.

Dan Cleverdon: I'm Dan Cleverdon from the District of Columbia Public Service Commission. I am a technical advisor to Commissioner Richard Morgan. And DC is a bit of an outlier in a lot of this. We're a small jurisdiction, only 67 square miles, but we're almost completely transmission dependent. 98% of the electricity consumed in the district is imported. Also being 67 square miles, we have very low generation. And we can't, like New Jersey, have a tri-part type thing. We don't have any place to put transmission. We don't have any place to put generation. So that puts us more squarely in the idea of following demand response. We are also all within southwest MAC. We are electrically part of Maryland. Everything that Doug said in terms of supply and demand applies in spades to the district. We are trying to pursue demand response. We have also some difficulties in that.

But we have one extremely large customer, the largest customer in the district, who is subject to budget constraints. And when it makes decisions on things like demand response, is also looking at putting demand response in places like Manhattan, California, places like that is GSA. We have very little influence over what GSA does. We've tried to work with them. It's been extremely frustrating. Hope we can in the future. But we are somewhat, you might say in terms of a lot of these things, we are price takers. We are transmission takers. We are generation takers. Things-- any transmission programs or projects that are socialized, that benefits us, that's socialized in any terms, both cost allocation it helps us and also siting and construction-- it helps us.

We are an outlier. We take the problems that New Jersey has and the problems that Maryland has and exaggerate them.

Sherman Elliott: Good Morning. Sherman Elliott from Illinois. Well, thankfully we don't suffer from a lot of congestion problems in Illinois; however, we have experienced many similar issues discussed here today. Not the least of which was the removal of rate caps in 2007, which caused a little political consternation here in Illinois, which resulted in some legislation. One of the benefits of which was mandatory requirement that our local distribution companies-- we are a restructured state in Illinois. But our local distribution companies are mandated to be members of an RTO for the next 15 years. So it does provide some stability in consideration that there was some legislation floating around that we're going to take them out of the RTOs. So I guess that was a certain improvement.

We've also created a new power agency, the only power agency which is tasked with getting the supply for those customers that are not yet served by alternative suppliers. And that's now getting off the ground. That agency is going to be dealing with issues, as far as I understand, on the demand side of the equation as well.

And I'd like to echo the comments of the other panelists here. There's a significant change on the horizon with regard to congestion management and digital technologies all across the spectrum from the consumer side of the meter all the way to the control center. And I think in any congestion consideration, those things should be looked at significantly in terms of planning. What are going to be the effects of broad-scale, smart meter developments, plug-in hybrids, distributed decentralized supply side options, fly wheel technologies, renewable energy when all these things are going to have a significant effect on planning for the transmission system of the future?

I'd just like to make sure and echo the comments that these alternative supply side considerations, particularly if you look at the advent of plug-in hybrids, if this doesn't cry out for some sort of dynamic rate design, I don't know what does. And also differing meter technology. It's around the corner and I'm just not sure how much of this is considered in the transmission planning process in both MISO and PJM in terms of their 20-year horizons. So to the extent that we can be cognizant of those developments and those changes and whether those technologies are being fully embraced in particular locations, I think we should.

One of the other items I wanted to touch on was the seams issue. We're crossed by a seam in northern Illinois between PJM and MISO. And so all of these issues between the systems and the joint, in-common planning can significantly impact what's going on. So I think that the closer we can come in terms of cost allocation issues and joint planning, the better off we are on all those issues.

We've also had some mandated EE and DR programs. The DR programs associated with the new legislation have been relatively tame. But they do grow on a percentage basis as

the years go by. And I think that will aid or should aid in the planning process, having those types of percentages known and measurable to some extent.

I look forward to the rest of the comments.

David Meyer: Thank you very much. Well, we've had a very diverse and rich set of topics raised here. I'm going to ask the panelists if they want to respond to what they've heard from some of the others just because of the breadth of things that has been raised. So let me just give people the opportunity starting with you, Commissioner. Please identify yourself by name for the benefit of the people on the Webcast.

Doug Nazarian: Sure. This is Doug Nazarian from the Maryland Public Service Commission. I don't have, really, much to add, other than to recognize and I guess give a little shout out to Commissioner McKinney again that we understand the multistate politics of addressing these transmission issues. Two of the three backbone projects, that we're aware of, touch Maryland to different-- one, barely and one fairly significantly. But one doesn't touch us at all.

And I'll let others quibble about whether everyone is doing their requisite political share in all of this. But I do want to make clear that we recognize how interrelated the grid and the circumstances are and that the electrons don't recognize state boundaries and that we have to, on both the transmission and quite frankly on the generation issues, we have to consider and pursue regional solutions to these.

Now as we look at our supply gap, we've had PJM, perhaps to Mike's chagrin, try to break it out on a Maryland-specific level just so we can understand for ourselves the sort of the scope of the problem within our state. But we recognize at the same time that we could build or find the number that Mike gives us for Maryland and it's not going to fix it if everybody around us stays at status quo. So we're all going to have different ways in which, depending on where we sit, vis-à-vis the constraints in the wires, we're going to have different ways we can contribute to solving the regional problem. And I know that not only our Commissioner, but our Governor and our General Assembly are committed to doing that. And maybe what needs to come of panels like this, in addition to the macro studies that the department is doing and some of the broader thinking, is we need to accelerate our regional discussions and cooperation on the issue so that we can all figure out where in the picture we contribute the most bang for the repairs buck.

David Meyer: Thank you.

Mike Kormos: Thank you. It's Mike Kormos from PJM. I guess a couple of points-- and I would echo Doug that I think the ability for the states to work together to look at solving these issues together on a regional basis will absolutely be beneficial. I know we are committed to working and have worked both with Maryland and with New Jersey in the development of their energy plans and would offer that to any state that's interested in working, again, to look at not only the state-specific issues but then how the region is impacted either by what we do or what the individual states are doing.

I would also echo the concern that Commissioner Butler raised on the seams. I absolutely agree. Probably one of our number-one priorities right now is dealing with the New York seams issue. We are as concerned as New Jersey that as we continue to try to solve and fix our problems and they are not simply used and leveraged by New York at an unfair arrangement, again, I think we're fine. And we have offered and will continue to offer to do joint planning with them.

We will need to deal with the sticky issue of cost allocation as we always have to do. And we believe it's important that we have those discussions and we resolve those issues, particularly on the New York side. I think on the MISO side we're in a little better shape. I think we're a little further down the path there in the planning side. And we have a cost allocation at least on file. We'll test it out hopefully at some point to see how it holds up. But I would echo both those issues. I should have brought up the seams issues in my discussion.

On the new technology, I would also join in. I think we are very much excited by what we see in the new technologies. But I would offer, if you look at particularly things like wind, if you look at potential carbon legislation, even some of the things like plug-in hybrid vehicles that overall is going to increase electric usage. It's not going to decrease it, but hopefully it will shift it. And I think getting involved early and making sure that things like plug-in hybrids, you don't come home on a 98-degree day and plug your hybrid vehicle in at 5:00 and start charging it. It is going to be critical for this to be successful. So I agree we do need to look at it.

I would also offer though that transmission is going to be part of it. Terry Boston was very fond of saying, if you like wind, if you like carbon legislation, you've got to love transmission because at the end of the day, we're not going to be putting a lot of these type of resources in and amongst our load. Wind is not going to be being built in Baltimore or Chicago or Newark any time in the near future-- maybe offshore Newark. But we're going to definitely need transmission to move that around. So I agree and then I think we are still open to how to fit that in the 20-year plan. I think that is still a big unknown. Energy efficiency is a big topic right now. We're trying to work on it. Again, how do we put that in the plan so that at ultimate day, what we're building is the right resource?

And we're also very committed that we're going to relook at our decisions every year. And we're going to take the best information we have every year. And we will not be afraid to go back and relook at something we've decided, re-alter it if the facts have changed, if we believe the assumptions that we previously have studied are going differently, we'll put in new assumptions and make that. So I think that's something, again, we will have to work together on.

Fred Butler: Yes, Fred Butler, New Jersey Board of Public Utilities. I want to thank Mike for his dedication on a lot of these issues of transmission and the alternatives and also the whole PJM team. I think they've been very serious about this and they have listened to our concerns, and they are working with us.

My feeling on this is let 1,000 flowers bloom. I think we've got a lot of potential out there, even wind in Newark. There is new technology where you can build office towers that use less energy, that create more energy than they use. And one of the ways they do it is by wind-- not so much the turbines that you see in California or we will soon see off the coast of Delaware and New Jersey or you can see on it, on the ground in land in New Jersey on the way into Atlantic City. But it's a new technology that allows wind baffles to be built into buildings and electricity to be generated that way.

Commissioner Elliott serves on the joint FERC-NARUC task force or collaborative on smart grid and is a very valuable participant in that. And I agree with his points on plug-in hybrids. And, Mike, if someone wants to plug in their hybrid at 5:00 on a hot summer afternoon, they probably won't do it twice once they see the bill because you can’t have a smart grid and dumb rates. So you've got to have smart rates that reflect time of use and

will charge appropriately for recharging a hybrid in the middle of the afternoon on a hot August day.

The statistic that I'm aware of, which John McKinney, again we heard in Annapolis from Commissioner Wellinghoff of FERC, was in response to a question that I asked him because they'd been asking me and I didn't know the answer, how much of plug-in hybrids can you have before you tax the capacity of the generating system of the United States? And the answer is, you can replace 89% of the vehicles on the road today, if you charge them overnight at low usage times, and still not reach the capacity limits of the current generation fleet of the United States. That's pretty substantial. So we can, as I said, replace 89% of the cars, vehicles on the road, if they could all run as plug-in hybrids or plug-in vehicles, totally plug-in vehicles, and still recharge them without constrained electric generation in the fleet of the US.

So we've got a lot of options out here. And I think that's one of the main messages I'm hearing today is transmission is one option, but let's not forget the others. Thanks.

Dan Cleverdon: Dan Cleverdon from the District of Columbia Public Service Commission. One of the things that I'm hearing that is quite gratifying to me is the idea of cooperation. The District had only really contributed as part of a larger group. In that respect, I want to point out, one of the really true benefits of cooperation can be seen in a study on demand response that was done jointly by PJM and a group of states called the MADRI states.

And one of the things that that particular study showed was the very synergistic value of coordinated demand response between jurisdictions. If we can do that, if we can work cooperatively both on transmission and things like distribution and, as Commissioner Winslow has talked about also, on generation, I think we'll be well ahead of where we are now.

Sherman Elliott: I agree on the cooperation. We also have a similar to MADRI here in Illinois. It's co-chaired by Commissioner Lieberman and Chairman of the IUB, John Norris. I was drawing a blank. It's called MWDRI, for the Midwest - Midwest Demand Resources Initiative. But we're also following some of the areas that MADRI has done and clearly borrowing a lot of the work from that.

But, also, I wanted to point out the work of the regional state committees. I know Lula Ford, who's President of OPSI, and John Norris of the Midwest equivalent. So there is a lot of regional input and regional cooperation on a number of these issues. So many of these things interrelate, and so much of these efforts cross over into each other's areas.

For example, we just filed an order here recently in the *Commonwealth Edison* case, initiating a statewide smart grid collaborative that we're directing the utilities to participate in. And, clearly, some of the things that we're going to be looking at are what are the impacts. And this is beyond just the operational and utility-related benefits but going into the wholesale market to take a look at the effect on operating and planning reserves. What is the effect of a wide-scale program on investment over a 20-year period? If you can impact the rate of growth and demand during these periods, what--?

That's the type of planning that I'd like to see incorporated into these transmission planning studies is what's the effect of different types of treatment, different types of supply side options and not just necessarily what's close to the rail line and what's close

to the traditional points of interconnection with the transmission system. Because if we end up going with more renewables, which seems to be the mandates of many of the states, I don't know if it's going to become a federal mandate, but that may change the dynamics of the transmission system and where it can actually run. So it's going to be a different picture completely, and I think it's veering from the traditional ways that we've looked at in the past.

David Meyer: Let me come back to the question of data and information sources, existing studies. Obviously, I think PJM in this footprint is just a-- has a wealth of information to contribute. But beyond PJM's data, are there particular data sources or existing studies or studies underway that have not yet been mentioned?

We are having a transcript made. And it's important from my point of view to get these things into the record because once they're in the record, then we can chase them down and they don't get forgotten. But one way or another, we need to learn about these things, this assortment. So let me ask the panel again for particular data sources, actual studies or studies underway that ought to figure in our congestion study.

Doug Nazarian: From Maryland, the one best source is the one I mentioned, which is the interim report the Commission filed with the General Assembly last December. It's on our Website. If you'd like us to provide you a copy of it or link to it, we'll be glad to do that. There will be a follow-up study that we'll submit the first of December this year that will build on that. But the real comprehensive analysis from last December, I think, is probably the best single writing there is, generated by our Commission, anyway.

David Meyer: Okay. Commissioner Butler…

Fred Butler: We have our draft energy master plan, which I think has a lot of data that would be helpful. We can also direct you to some of the background studies that were done by the Rutgers University Task Force for Energy, Economics, and the Environment, which served as consultant to the state of New Jersey for that energy master plan. And I will ask staff in New Jersey to make those things available to you.

David Meyer: Okay.

Dan Cleverdon: The only data source that I would say is what I just recently mentioned, and that's the MADRI/PJM demand response study that was done by the Brattle Group. That's available, I think, both on the PJM Website and on the MADRI Website.

Sherman Elliott: I think the Brattle or someone within MWDRI is working on something similar, particularly in the MISO footprint. And I would suggest that as it becomes available I could certainly have that forwarded on.

David Meyer: Good. I have colleagues here in the audience who are going to be helping me with the congestion study. Let me see if-- I'm thinking of Joe Eto and Alison, if they have questions they want to raise.

Joe Eto: My name is Joe Eto. I work at the Lawrence Berkeley National Laboratory. Several of the speakers have talked about seams issues as being important concerns about how joint planning cost allocation takes place. From the standpoint of a 2009 congestion study that

DOE is preparing, how should those issues be characterized from the congestion standpoint?

Mike Kormos: Mike Kormos from PJM. That's a good question, Joe. I think you need to look at it holistically at the entire region and try to quantify the impact that each of us have on the other systems in overall congestion. I don't know if it's as easy and as straightforward. Probably to look individually in our own footprints, I think the information will be easier to discern inside of our footprints. It's probably a little more difficult. A lot of the energy that flows across and between us are done through bilateral transactions. We don't necessarily have a lot of the cost information on those as to what they're contributing or not contributing to congestion.

But I do think when you look at it, you need to look at the entire bigger picture to recognize. As Commissioner Butler said, we're well aware of the fact that anything, any line that gets put in between New York, there's not a whole lot of excess energy yet, in New Jersey, maybe there will be someday. But anything that comes into New Jersey, we're going to have to bring across the Allegheny Mountains. It's just what we do. And, therefore, looking at those impacts and realizing that, yes, New York can have just as big an impact on PJM as our own load does is important.

And looking at what their alternatives are, New York also has some alternatives from the north, and how that could impact the plan.

David Meyer: Let me try to sharpen the focus here a little bit on this, because I think we do have an opportunity in this congestion study to put some focus on the seams questions and not with the idea of necessarily-- I wouldn't even attempt to come up with fixes or to suggest fixes. But, just to characterize the problem and delineate it and describe it in the best terms we can and show that it's there. Show the nature of the problem, the scope of the problem, and, if possible, maybe some trends. Is this something that is getting worse? So I welcome suggestions from all of you on how to get-- bring more attention to this particular subset of problems.

Fred Butler: David, it's Fred Butler from New Jersey. Although it would be helpful for the DOE to highlight the problem, I don't think those of us that live it every day need you to describe it and to talk about trends. I think we need some proposals for solution, and I think the first one, as may have been eluded to earlier, is a little more cooperation and coordination in planning across those seams.

Now, PJM has done the first steps for this. New York needs to be told that they need to get as involved. We really do have, as I said in my remarks, two well-meaning ISOs next to each other that go about life differently, and that's got to be resolved. So it's fine to talk about the problem. It's always good to identify for those that may not know that it exists that it exists. But we need to take the next step towards opening some serious lines of communication that will lead to some better planning across.

People are not aware of the fact that there was a proposal to take an existing generating plant in New Jersey and disconnect it, just decommission it on day one in PJM and re-commission it the next day in the New York ISO without moving it a quarter of a millimeter. And suddenly, it would start up the next day as part of the New York ISO. It

was a generating plant that was built since restructuring, so therefore we had limited ability to say, no, you won't. But we were going to take every possible option that we had. Luckily, it was a proposal that was submitted to the New York ISO which they did not accept. Surprises happen every day.

But that's the kind of thing that would have-- and there would have been no necessary requirement to make up for the deficit of a couple hundred megawatts of power being transferred out of New Jersey and out of PJM into New York ISO by a paperwork process. And so those are the kinds of things that we've got to talk about and make sure that they don't happen and that there are plans and projects that are worked out between the two ISOs across those seams. And not too far away, by the way, we have another seam into southwestern Connecticut, which is talk about a congested area, Southwestern Connecticut and the New England grid is just as congested as anywhere. So it's a tri-state issue up in that neck of the woods.

Alison Silverstein: Alison Silverstein, Consultant to the Department of Energy. I'd like to get a little clarification from you, if we may, about seams issues. Back when we started calling them seams issues, they were more about procedural and operating hitches that occurred because two different ISOs or operating entities were trying to make things work and we were running into these guys dispatch on the half hour, and these guys dispatch on the hour or rules that didn't sync.

You all are talking about something that's far more substantive and long-term impactful. So can we back up a step? I've heard you talk about cost allocation issues, which I think was more substantive than just getting operating rules to sync. I've heard not just regional but interregional planning. I wonder if you can go through and detail a little more about what these big issues are, because I don't think of these are seams issues. I think of these as pretty substantive, long-term industry problems. So can you explain what the broad issues you're talking about are, please?

Fred Butler: Let me take a crack at it from the policy angle, and then Michael can, I'm sure, talk about it from the procedural RTO angle.

We think there ought to be some joint planning. We understand that the market does not recognize the lines of an RTO. The New Jersey border with New York and the Hudson River means absolutely nothing to a regional market. And it shouldn't. However, when you have the kinds of market-based, market-driven behaviors that go on, there must be some consideration for the effects that those have on the people that live in those markets, *i.e.*, the New Jersey side of that transaction.

Cost allocation would be specific to that. In other words, if you're going to build a plant or decide that a plant you built with shareholders' money is now going to sell solely into the New York market, there has to be some concomitant attention paid to the effect that that has. And it has to be rule driven, and it has to be some sort of, probably FERC driven, set of rules that explain how that cost allocation is going to happen.

At the same time, there has to be some discussion of planning across those artificial borders of this market. In other words, when New York decides that they need this kind of improvement or this kind of addition, through either the transmission or the generation

or the whatever, a component of the market, they need to be sitting down at the table with folks from PJM and telling them. We hear about things on conference calls because we're always on these conference calls. And, suddenly, we hear, well, I talked to you about that. Well, no, we didn't. So that's the kind of surprises that we need to avoid if we're going to really truly have a regional/national, or as close to national market as we can.

Sherman Elliott: Just to echo a comment that Michael made earlier, Sherman Elliott from Illinois, Michael commented on the working relationship between MISO and PJM, particularly with regard to some of these joint issues, planning, cost allocations. But Fred's correct. You can't operate as a single entity and plan your transmission system as if what exists around your border does not have an effect or won't be affected. So to the point at which this joint planning needs to occur, where different configurations of the system could possibly be more efficient and more economical, I think those are the areas that really need to be expanded on.

Mike Kormos: I could take the rest of the time if I had to try to actually answer this question. We're dealing with a number of issues at the border. We still have the classic operational issues as far as our ability to re-dispatch generation in another RTO, to minimize congestion in one footprint to that joint re-dispatch option. We're in discussions with New York to try to do what we've done with MISO. We think it's been very successful and it's proven that, again, not looking at the border but looking at sort of a joint dispatch and being able to use each other's resources most efficiently is absolutely the better answer. We have not yet been able to get an agreement through New York-- with New York on doing very simple-- so we're still dealing with some very same operational issues. As Commissioner Butler said, the RTOs grew up with different philosophies, and therefore we do have some barriers now that we need to break and they're not as easy as you would think.

The seams issues, though, I think in the planning-- I think they are just still seams issues. The seam thing is just one set of participants believing that they are either disadvantaged or advantaged by the existing rules and therefore have reason to either want to change them or not. At least right now, I think the issue we have is pancake rates still exist between New York and PJM right now. There is reluctance on the part of PJM to get rid of those, mainly because of our issue in that there is no current allocation for the new transmission we're putting in. Right now, our members are going to pay significantly upwards, to the tune of $6 billion, for those upgrades and are very reluctant to not-- unless there's more equity, to just simply give up the transmission rates with no ability to re-collect.

And so the existing, I think, lines that have already been proposed-- how they're handled, and can anything be done differently there is an issue.

And then the last one is absolutely then really coming up and truly doing joint planning. And the issue there is, again, just what set of assumptions you're using, how your market, whether you drive from market-based solutions, whether you're looking to encourage more demand through response, more transmission, again, the RTOs may not necessarily be on the same page. And we've talked a lot about cost allocation. Cost allocation is a very, very contentious issue in PJM. It still is. I don't believe it's necessarily totally

resolved itself at this point. Those issues just get significantly harder to solve when you're starting to cross international boundaries.

And I would offer, again, I do believe it needs to be done nationally. I don't know if having different cost allocations in different regions is ever going to allow us to solve this issue, because it then automatically creates a scene. When we do things differently, it's very then difficult for them to decide how to do it together when you're starting from different bases. You're starting from just different allocations.

David Meyer: Okay. Thank you. Let me turn to a somewhat different topic. That is, as you think about planning systems, not just transmission planning but system planning, we do have a lot of emerging technologies, new technologies on the menu now. And many of them will not become widely used for some while. But, nonetheless, I think they do-- they are starting to-- the need to address them in the planning process is starting to arise. And I'm thinking of increased levels of renewables of not just wind but other kinds as well. PHEDs have been mentioned. Storage technologies have been mentioned. So I want to hear how, the way it ties back to the congestion study is that what you think about existing congestion can be affected by how you treat it in the planning process that you're going to use going forward. So to the extent that planning process is kind of in flux now to deal with some of these newer technologies, I'd like to know more about it.

Doug Nazarian: This is Doug Nazarian from Maryland. Mike is probably the best person to talk about all this. Before-- I think we view it as a sort of supply and demand yin and yang. And as we learn of new technologies that may bear on that, on one side or the other of that equation, obviously, that's going to enter into our planning process. But at least to my knowledge, none of that is happening on a scale that's going to move the needle tremendously. So, around the edges, it's interesting, and we know about it and we care about it, and we'll factor it in. But really, the issues that we're confronting is regulators. I don't know of any technology that's going to solve them in any real way any time soon. It bears on the longer-term thinking issues like what do we do when people start plugging in their hybrids at night and changing the demand peaks? That's all really important to understand. And similarly, technologies that may improve transmission or that may enhance generation or allow storage, that's all great. But I see those as sort of peripheral and not really central to what we're doing and thinking about, at least as we look a few years out.

David Meyer: Okay.

Fred Butler: I think we've got a measurement and an evaluation problem. And that is, how do you measure and evaluate whether the goals that are being set by all the states-- 20% renewables by 2020 seems to be the modal goal that's set. I mean, it's a nice goal. It's interesting that most of the office holders that set those goals won't be in office in 2020, so we won't be able to hold them up to scrutiny as to whether they achieve their goals. But goals are good to set because, without a goal, you really are sort of just wandering around trying to do your best.

But, as a previous vice president of PJM used to like to say, we need to know whether these renewables are going to be there when you say they're going to be there so that we can decide whether we do need this much transmission or whether we need that much

transmission or whether other traditional generation needs to be kept online or put online, et cetera. And that's very true. She was right in that. You've got to measure these things very carefully and decide whether they're there. So that is, I think, a challenge.

I think we're getting to that point. We're addressing it with some of the things that PJM and the states are doing. And we're all deploying renewables as quickly as we can. We're all trying to do as much energy efficiency and conservation as we can. Again, when you set a conservation goal, 20% by 2020 demand reduction, you've got to know how far you are into that and whether it's real and how sustainable it is.

Doug Nazarian: If I could just build on one piece of that too, Dan's point about what can and can't be built or sited in DC is maybe the more extreme example. We're still a relatively small state. We have aggressive renewables goals. And I think as we get farther down the path and closer to when those goals need to be realized, the political imperative for enhanced transmission to bring the Midwestern winds to the east, for example, is only going to build. So it may be that regardless of what we do in other ways to maintain a reliable grid in places like Maryland, it may be that the politics of renewables may create another layer of imperatives to enhance transmission because I don't think we could build enough wind in Maryland to satisfy our RPS requirements, for example.

So that's another layer. And that's probably farther down the path in real terms than the 2009 study. But we're all going to start to feel that dynamic, particularly some of, again, just to pick on the Midwest for a second, the wind farms that have been discussed in the plains start to become a reality. There's going to be greater political imperative, I think, to find ways to get that power to us.

Mike Kormos: Mike Kormos from PJM. I have to say I agree fully with both Commissioners.

Unidentified Participant: Write that down.

Mike Kormos: It's a very good position to be in. I agree. I think right now a lot of this, the short-term issues, I'm not sure there is technology out there that can make a significant impact for the short-term. I think where we're at probably meets this plight. I think long term though, absolutely we need to deal with these issues.

And they're setting up a natural conflict that concerns me in that, when we go through the planning and particularly the reliability side, and we start looking at NERC standards, they're very black and white. They're very criteria based. And that, obviously, we're subject to million-dollar-a-day penalties; we take them absolutely seriously, and we will comply to the full letter of those standards. But they tend to drive you to need to be black and white.

When you also then go into the hearing process and the state siting process, we've had some now experiences. The states have a very difficult job to do in siting these facilities. And there are huge impacts that we understand politically and environmentally for those individual states that they also tend to need almost to be black and white. They need it to be very clear-cut, so they can make their decisions.

And what ends up happening though, it sort of then drives us to want to have these very rigorous standards in the planning process. It doesn't allow us to start looking at a lot of these different options and looking at the new technologies and what if these things do happen? What would happen?

We're trying to do that in our market efficiency analysis. We sort of separated the two, where reliability still very much is criteria driven, based on the absolute known assumptions, what we have on the books. And then overlay that to some of the market efficiency analysis that allows you look at, well, what if load doesn't grow as fast either through economic conditions or better demand response or better energy efficiency responses? What if we participate in the deal, we wind study-- we can see some longer-term wind. And we are absolutely open to do that, and we will run those studies. I think though there then tends to be, though, a natural clash when you start to get into the standards and the siting that people don't want those kind of assumptions. I think that's something, again, we need to work out is where everybody's comfortable with this.

Sherman Elliott: Sherman Elliott from Illinois. Just to add onto that, I think as Fred mentioned earlier, it's sort of a three-legged stool. You have three ways to address congestion - transmission, generation, and DR. Transmission and generation are much more centrally focused and much more easily gotten your hands around, whereas DR energy efficiency renewables are much more decentralized and essentially are a lot of times driven by state political mandates, as well as others environmental as well.

So they don't necessarily fit into the planning processes that the RTOs generally engage in. For example, I don't know to any degree of any Midwest governor necessarily working with the RTO to discuss a 20% renewable mandate or whether wind, where and how, should fit in.

Looking at some of the queue problems, I think that's fairly apparent that those conversations have not occurred. So I think that's part of the problem is the decentralized nature of these new technologies, these renewable and environmental and DR sides of the coin, so to speak, or the other leg of the stool, that make the centralized planning a little more difficult.

Fred Butler: Let me ask Mike a question. Fred Butler from New Jersey. How often does PJM actually look at the amount of demand response-- in other words, energy efficiency or demand reduction and then renewables that are actually there? I can understand you guys have a real problem determining not the what-if, but to what extent is this stuff in and operating and reliably producing alternatives to say transmission? It's not something that you normally or that you used to pay attention to, because it just wasn't part of your mandate. But how often do you measure this?

Maybe there ought to be a more regular schedule for measuring this so that we, the states, know, look, on the first day of every quarter of the year, we've got to demonstrate to you that there's this much demand reduction, that there's this much renewable online and producing so that you can plug that in to your transmission planning process.

Mike Kormos: This is Mike Kormos again from PJM. Formally, easily every year, we will absolutely look at all the demand response numbers we have, the load forecast numbers we have,

and there's our official reports that are put out to specify what we have actually seen on the system.

In demand response, it can almost be a daily event. Any time we start to see significant loads, we are out there trying to measure what the actual demand response is. Since we have to build and pay for a significant portion of it, we absolutely know what it is. So that, again, is continually updated, and we are tracking that.

I think the issue is then, Fred, going forward, how do we forecast the growth of that? I think we're a little more comfortable right now forecasting the growth of load sort of on the historic what we've known impacts of load growth, basically driven by economic data and GNP and things of that nature. I think what we're struggling with is, though, how do you then factor in the growth on the other, on the renewable side? That's where it's a little harder for us to discern.

Also, some of the things like energy efficiency, response to real-time prices tends to get a little more lost in the numbers. It's a little harder for us to decide is the load tailing off because people responded to prices, or is it because economic conditions right now are really not that great? Because you would have different assumptions. If it's simply an economic issue, that people are a little tighter in the wallet, that could turn around very quickly and come right back on us. If it truly is people responding to prices, then that's a much longer-term effect and I think we would be willing to count it. So we have more work to do in that area, and I think that's where we continue to hopefully work with the states and others to try to figure out how to make that happen.

On the renewable side, again, I think the key issue here, there is a little bit of, again, a dilemma with competition. And allowing 40,000 megawatts of wind generation is in our queue right now. Where it's going to actually develop, it's not our, at least we're not in the position to make that determination right now and force people to get out of the queue or not. So, again, while we're tracking it and we're analyzing it, that is one area, when you look at competition like that, it's much more difficult for us to be prescriptive as to what we can and should be doing in the renewable but not forcing a solution on to the industry. So that's another difficult one where I think we have good information, but we're not necessarily sure how to slice it and dice it and discern it to then put it in a plan that people are going to look at and say, absolutely, we all agree with that. Right now, there's a lot of people who take issue with that.

David Meyer: That raises a question that I'm interested in. That is, how confident are we of our assumptions about price elasticity and demand? I know we got assumptions in the models with respect to price elasticity. But now's an opportunity to test those assumptions. It's going to be important to confirm those assumptions and maybe adjust them as people are now becoming more responsive. So where do we stand on that particular question? Would you like to start?

Doug Nazarian: Well, where we stand is-- I think we don't know. I think we've seen in Maryland over the past few years some fairly significant rate increases as rate caps came off, and we haven't seen load tail off. But I don't know as I sit here whether that's going to change or not.

I was asked a similar question yesterday by a reporter. And I said, well just anecdotally as a guy who reads the newspapers, I saw people change their driving behavior when it hit $4 a gallon a lot more than when it hit $3. I don't know why that was. I can't say that we've studied that. But, just sort of observationally, I don't think in Maryland, I don't think we've hit a price point in our flat, non-time-of-use rate structure, even with increases, I don't have any reason to think we've hit a point where there's going to be serious price elasticity-driven changes in behavior yet. I don't know where that point is.

But I also-- we haven't done a systematic study of it either. And I think, as we look seriously at energy efficiency and demand response programs, or more seriously, I should say, over the next year or so, that may play a greater and greater role. Now you have to marry that with information. You can't, you can't expect, I don't think, people to respond to price elasticity anywhere near with flat-rate pricing the way you would when there's some real accountability between usage and pricing and information that goes with that. But that's a ways off in Maryland. So it's a complicated question I think the easy answer to which is, we don't know yet, at least from where I sit.

Dan Cleverdon: Dan Cleverdon from DC Commission. At the present time in the District of Columbia, we have a smart metering pilot program. And the whole function of that program is to do a statistically valid analysis of different kinds of dynamic rates which would, among other things, especially the real-time portion of it, would directly measure elasticity of demand versus price.

And I think the more pilots and the more information we get like that-- I know that the Brattle Group, for example, has gotten a lot of information. Ahmad Faruqui has a lot of information on elasticity of demand gathered from a wide range of pilots. The more pilots that we have that are aimed and done in a way that are statistically valid measuring things like that, we should within the next year or so, I think, get really good ideas about price elasticity.

Fred Butler: A quick addition. Fred Butler from New Jersey. Part of the FERC-NARUC collaborative on smart grid is an attempt by Commissioner Kelly, who is the FERC co-chair, and myself, the NARUC co-chair, is to put together a clearing house for pilot projects so that we can all see, to the extent that's knowable, what the results are and what the demand elasticity findings might be from some of those pilot projects.

It's not going to be easy because some of that stuff is proprietary, and some of the utilities don't want to give up what their failures were, especially to the regulators. But we're going to do our best to sort of gather some of that information, so it will be available.

Sherman Elliott: Sherman Elliott from Illinois. The pilots are getting larger. In some places, they don't even like the use of the term pilot, certainly not in Illinois. I think a lot of people have said we've done enough. I think Ahmad Faruqui from Brattle would tell you that the elasticities are fairly well known given the 30 years of studies that have been done with regard to these things.

The question is, does it hold for the broader set? Part of that I think Doug touched upon. It's education. It's consumer education. It's time. It's going to take tools and automation. A lot of things are going to factor into this. But there are sort of necessary preconditions to

all that going on, and that's infrastructure investment. Right now, I think some of the pilots could be looked at as sort of technology tests. What's going to be the prevailing technology? What's going to be the broadest scale and scope with regard to that?

But I think, for the most part, elasticities are fairly well known. The question is, will they hold in an entire LBC community or a subclass?

David Meyer: Well, we've reached the time scheduled for this panel. It's been a very fruitful discussion from our point of view. And we appreciate your time. We're going to take a 15-minute break. We will resume at 10:15 sharp.

[second session]

David Meyer: So I will again ask each panelist to identify himself or herself not just at the opening of the discussion but also as we get into the Q&A portion. We're going to start off again with short statements from each individual, and then we will go on to focused questions and dialog. So, with that, again, I'm going to start with the first person on my left here, Ed Tatum. Thank you, Ed.

Ed Tatum: Well, thank you, David. I'm Ed Tatum with Old Dominion Electric Cooperative. We are what's called a not-for profit generation transmission cooperative. We have a small amount of local transmission in the Virginia portion of Delmarva Peninsula. Paul's laughing at me. We've got about 100 miles of 69 now, so we're moving on up. It used to be just 500 but a little bit above 500.

Anyway, we are what's called a transmission-dependent utility. Congestion's a big issue for us. Over the past ten years, we and PJM have seen congestion move out of our neighborhood, which is the Delmarva Peninsula, and into the main east/west interface in PJM. And, although congestion on the Peninsula has decreased, overall congestion in the PJM has increased. Again, that's important to us, as most of the energy sources at PJM West is delivered there. And we need it into the Peninsula as well. So we have to get it from there to here.

The 2007 PJM state-of-the-market report tracks congestion ranging from about 464 million in 2003 to about 1.8 billion in 2007. We're estimating that for 2008 congestion is trending to be well over about 2 billion. We believe congestion decreased on the Delmarva Peninsula as a result of the collaborative work by ODEC and Delmarva Power to evaluate, plan, and construct projects that went beyond what we refer to as some of the minimalist reliability standards and actually included assessments of the economics of relieving congestion.

The model worked in our local area. We believe it can work on a regional level, if we can get past the politics surrounding regional economic planning. And these are, some of these issues that I talk about here include hedgeable versus unhedgeable congestion, the cost of FTRs, and this concept of the proper role of transmission within competitive markets. We see transmission in the competitive markets as a facilitator of competitive markets. We do not see it as a fungible commodity that is substitutable with generation and/or demand response. We see it as necessary.

We believe the problem we have now is twofold. First, we see transmission investments lag load growth and generation investment over the past 30 years. And second, with the advent of competitive markets, we are now using the grid in a way that it was neither planned for nor constructed to support. I've heard this said a number of times. If you like renewables and you like wind, you like transmission. Well, if you like markets, you like transmission as well.

So we need more transmission, and we need a new way of looking at transmission planning now that we no longer have vertically integrated utilities planning and operating both the generation and transmission. I think Mike Kormos made this similar point earlier on. It's a different world out there.

What is Old Dominion trying to do? Some might say that Old Dominion through the PJM stakeholder process is fussing a lot, and we are. But as part of our fussing, we're attempting to effectuate some change, and we're trying to make sure that the PJM regional and local planning process is working. We're trying to make some concrete suggestions for how to move forward in that area. We're trying to make sure that PJM has sufficient authority and staff to lead the regional planning effort and to hope that PJM will begin to develop new approaches to planning transmission grid where generators are expected to behave competitively.

What reports or studies should DOE review? I think a number of the earlier panelists suggested that a look forward is not a bad thing, and Old Dominion will share that view. And I know that you all wish to look at historic. But we do believe there should be forecasts to congestion, and it should be over a meaningful timeframe. I'll let everybody sit down before I say that it should be about 35 years.

Now, that's going to be quite a challenge to do that. But for the simple fact of the matter that these assets last a long time and that's where you're going to see the actual value of them. We believe you should look to the forward world because we believe our actions today should be considered and guided by what we might see in the future. We feel the value of economic transmission occurs in the long term. We feel that it is equivalent to the value of gross congestion and increased operational flexibility that you have. Our experience so far in PJM is that merely extrapolating historic congestion has resulted in no economic transmission build.

Nonetheless, if we're going to do historic information, in addition to all the studies and reports that have been developed by PJM, RTOs, and the other ISOs, as well as the PJM state-of-the-market report, we suggest that DOE consider working with the RTOs and ISOs to compare transmission grid capability relative to loads served from a historic period, let's just say maybe '68 through 1978, versus what we have now in the competitive markets, perhaps 1998 to 2008.

Here's why we think this could be helpful. Prior to restructuring, individually vertically integrated utilities planned and built their transmission and generation facilities in consideration of both reliability and economics. And it could very well be instructive to evaluate these past construction decisions against current reliability criteria-based decisions to ascertain how much economic planning truly went on before we entered into

an unbundled and competitive market. The electric grid at that time, we submit, was not overbuilt. Rather, we believe it was optimally planned in consideration of and in concert with the utilities-owned generation and accounted for both reliability and economics.

The vintage pre-1978 facilities are for the most part still in service today, and we're grateful for that because that provided us sufficient headroom to enjoy what benefits competitive markets have brought us so far. Review of escalating congestion costs in PJM provides clear evidence that we're eating away at the headroom that we once enjoyed under a vertically integrated paradigm. And, if we must look (technical difficulty), it may be helpful to try to quantify this headroom to provide a basis for what would be required to make it up in the future.

This assessment could provide a benchmark grid capability goal in a forum on thinking about how much congestion is a reasonable amount of congestion. You can't get rid of all congestion. How much transmission is needed and, given that scope, the best policies and practices to get the new transmission in place.

Finally, another opportunity Old Dominion believes is important, was brought up by many of the panelists from the first panel, and that's thinking about how we do planning. Perhaps DOE could consider assessing historic methods of utility planning for generation and transmission under our vertically integrated paradigm and, based on that assessment, suggest some best practice planning approaches that would be more appropriate for a regional grid that is facilitating a competitive marketplace. We must change the way we plan transmission to develop competitive markets.

Old Dominion has some suggestions we have offered. They include, but are not limited to, a developing of more robust, if you will, RTO-led planning process, where transmission construction decisions are based on multiple scenarios. And that's what we talked about a little bit before with all the different fuel prices, different dispatch, different environmental limitations. Consider lowering the hurdle for economic transmission projects to clear the planning process. Model location-specific generation additions rather than uniformly ramping up all existing capability to accommodate load growth in out years, and evaluate critical transmission interfaces and assess the value of those varying transfer capabilities. Both within PJM we have critical interfaces, and we talked about seams earlier.

We greatly appreciate the opportunity to be here today to discuss this with you all, as well as the efforts that you all are making, and everybody in this room, to get some transmission built. Thank you, David.

David Meyer: Thank you. Next, we have Steve Naumann.

Steve Naumann: Steve Naumann from Exelon Corporation. First, I want to welcome everyone to Chicago. This weather we have here today is typical year-round weather. We also have, at least today, two first-place baseball teams. The Cubs are nine games ahead. But there are more than nine games left in the season.

I'm going to try to keep my remarks short and aimed at the congestion study as opposed to the planning process, what I understand DOE statutorily is supposed to be doing.

I guess what I'm going to say may be a little bit controversial, because I think DOE is on the wrong track. While it might be interesting to look back at what congestion was, I think for the purposes of the statute, which is to evaluate congestion and ultimately determine if any corridors should be designated, I don't believe it's very useful. I believe congestion, as other panelists stated on the first panel, should be looked at in the future and not in the past.

We need to account for transmission that is approved, that's in permitting, that's under construction, because it makes a big difference, especially the new high-voltage lines. Since we're talking about PJM in this session, as we know, there are two major east/west projects that have been approved by the PJM Board. They are in permitting. The TrAILCo line and the PATH lines, as Mike Kormos said earlier, those are going to make a big difference.

While they were justified for reliability, I think people need to understand that the reliability test under the NARUC tests are generally driven by a very few hours in a year. While in the rest of the year they may not be needed for reliability, they definitely contribute to relieving congestion during all those other far more hours in the year than the peak hours. So it is important to account for those lines and also in the future.

The second question I wanted to talk about is, what drives congestion? And I think we've been through this, but fuel prices, and obviously had we done the model two months ago when gas was at $14 and now gas is at $7, you might be getting quite different results. And, therefore, you really have to look at a number of different scenarios. Renewable portfolio standards is the issue du jour. And clearly, that is going to be driving where some of the sources of power are and maybe driving congestion. As the previous panel discussed in a lot of detail, demand and the impact of demand-side programs and energy efficiency and even new technologies, such as plug-in hybrid vehicles.

That would be interesting to see if what the Toyota guarantee on the Prius is when you start plugging it in and whether people are going to wonder about their warranty being not honored if they do that. Those are practical things, by the way, that need to be solved.

And, of course, the location of generation, because that determines both transmission demand and congestion.

As I said, we believe that any congestion study must look at multiple scenarios. If you just looked at one scenario, let's just say 20% wind in the Dakotas to serve the east coast, although as somebody noted, there is lots of wind resources offshore, you may be getting an unrealistic answer as to what congestion would be. We think a good starting point for the PJM region is the PJM long-term studies. They account for the new transmission that has been approved, and that would be a good starting point.

And then, going back to something I earlier said, you really need to look at sensitivity studies with multiple variables because I think in the 30-some-odd years I've been in this

industry, if there's one absolute, the industry has been wrong about fuel prices always. So you have to look at lots of scenarios.

So thank you for inviting us. Welcome to Chicago. Please spend a lot of money here, the economy could use it. And thank you.

David Meyer: Thank you. Let me turn next to Paul Napoli.

Paul Napoli: Thank you, David. Excuse me if I repeat some of the remarks that Steve just made. I think it's inevitable that we'll have some overlap.

Good morning. My name is Paul Napoli. I'm the Director of Transmission Business Strategy for Public Service Electric & Gas Company. And, again, I'd also like to thank you for the opportunity to speak today on transmission congestion.

The PSE&G companies fully support investment in transmission infrastructure where such investment is needed and represents the most cost-effective solution. The PSE&G companies believe that transmission construction is a less complex proposition. What is needed to satisfy a region's reliability needs, since in this circumstance the benefits associated with the construction, that is the elimination of reliability per tier valuations are really straightforward, technical assessments.

While it is undeniable that all transmission has an economic impact, it is significantly more complex and unclear, however, to gauge the merits of regulated transmission that is being planned solely to alleviate congestion. Now to be clear, I'm not speaking about merchant transmission but regulated transmission that will be in customers' rates and which is being planned not to maintain reliability but solely to address economic factors.

The long-term implications of these economic planning decisions on competitive markets cannot be ignored, as the drivers for pure economic regulated transmission projects also affect the business decisions of various market participants and economic drivers are often so much more difficult to predict with any accuracy.

Assessments of current levels of congestion are often subject to dispute and vary depending upon the assumption metrics used to measure congestion. I think we've all heard this already. These assessments represent a snapshot of system conditions at a given point in time that can change dramatically with variations in demand, supply options, and generation availability, as well as delivery system conditions, and none of these, none of which are related to maintaining a reliable system. Moreover, forecasts of future congestion are inherently suspect because they are driven by long-range projections of many things, including fuel and carbon costs for which no one has a crystal ball. So we are faced with the fundamental question of what level of ratepayer-funded expenditures justifies protection against an uncertain congestion forecast.

First, I think it would be grossly inefficient to plan and construct a transmission system that eliminated all congestion. To achieve the goal of eliminating all congestion, the cost of transmission additions would certainly exceed the value of the avoided congestion

costs. Thus, there must be a cost/benefit analysis to determine whether a given transmission upgrade is warranted.

Second, the fact that congestion exists in a given region may also reflect land use policy choices, such as environmental policy choices which require the use of more expensive but less polluting fuels or inherent geographic factors that limit the expansion of transmission or generation solutions in that area. In those cases, it may be appropriate for the region to bear congestion costs reflective of those factors and those decisions.

Of course, congestion relief is not the sole function of economic planning or the reason for construction of transmission and/or generation projects alone. But many, if not all, reliability-based transmission projects, on the other hand, inherently provide congestion relief, as Steve mentioned earlier, and perhaps not specifically by design but as a beneficial side effect of improved infrastructure that was constructed.

For example, PJM has estimated, Ed mentioned this before, that region-wide congestion costs in 2007 amounted to over $1.8 billion. However, currently, though, the anticipated PJM reliability-based transmission upgrades that are out in the most current TEAC reports are expected to relieve much of the congestion associated with the 2007 historical constraints. In fact, a review of the PJM congestion data shows that for instance PSE&G has provided congestion relief through other recently constructed reliability-based transmission projects.

Now, one such example for those who may be familiar is the Aulding-Essex transmission line project that PSE&G built to relieve no longstanding transmission import limitations in northern New Jersey. This new 230 kV line allowed for an additional 400 megawatts of import capability into this congested area. And while the project was built to address reliability needs, it also effectively eliminated gross congestion costs that were about $30 million in the year prior to the line's 2008 in-servicing.

The PSE&G companies support the OE corridor designation where transmission construction is needed to address-- clearly identify reliability concerns; however, we remain concerned that expedited siting for long-haul, transmission funded by regulated rates to the extent that these projects are in fact developed as regulated or directed solutions may distort, if not destroy, market signals for multiple developers of generation and demand side management. You've heard Commissioner Butler in the first panel talk about initiatives that New Jersey is undertaking for renewables within their own energy master plan.

Now such directed regulatory action could endanger the development of new generation where it is critically needed for reactive power and voltage support and may encourage the siting of generation, particularly coal generation, in those areas with the most lenient environmental requirements, thereby exporting the resulting environmental impacts to other regions. That's a particular concern of those that are in the Regional Greenhouse Gas Initiative (RGGI) area.

So, in conducting the 2009 congestion study, the DOE, we believe, needs to mindful of the following. Reliability projects have been built and will continue to be built and, as a concomitant benefit, will relieve congestion. The DOE should take into account the benefits of all the planned reliability transmission projects in its congestion study. Also, the DOE should consider the impact of carbon legislation on future congestion patterns. The DOE should look at the success of competitive regional markets in addressing congestion and exercise appropriate restraint in its congestion analysis as to not undermine competitive market and demand side management initiatives. PSEG has always advocated the construction of the right amount of transmission and continues to believe that the DOE will be in a position to carefully manage this process and the next congestion study will be very successful in its mission without imposing unnecessary costs on customers.

Again, I'd like to thank you for the opportunity to speak today. And I would, Mr. Meyer, since you had asked, would offer that there are a number of things to look at. One would be, as Steve mentioned, the PJM long-term studies. Second, I would also include in there the 2007 state-of-the-market report, which I want to make known, Mike Kormos knows I carry it around with me like a bible all the time. Here it is right here. The TEAC, most recent TEAC report that Steve and his group put out, which shows all of the upgrades that will be coming forward or proposed to come forward. And, also, tomorrow's OPSI presentation on transmission planning, I think there will be a lot of relevant information in those presentations that should be taken into consideration. Thank you.

David Meyer: Thank you. Very helpful. And next we have James Haney.

Jim Haney: Jim Haney with Allegheny Power. I'm going to take just a little different track than I think most of the other speakers have and talk a little bit about our TrAIL project. Now, I know there are Commissioners in the room, so I'm not going to get into any of the specific cases, anything specific to the case. But I wanted to talk about it, and first I'll tell you exactly what the project is. We've talked about it, Kormos and a couple others have, but it starts in southwestern Pennsylvania and goes through West Virginia to the north central part of West Virginia and into Loudoun County, Virginia in Dominion territory. So it goes through three states. It's one of the backroom projects that we talked about. And it was justified solely on reliability throughout the whole process. We focused only on the reliability issues that it solved. As Mike Kormos said on the earlier panel, while it was justified for that reason, it certainly has a huge impact on the congestion that we're talking about today.

It's been a very interesting project that I think a lot of folks have been tuned into it. And one of the things that has really been an issue in the backs of everyone's mind is for backstop authority. And, while that's certainly an issue and certainly part of the process that we're, in the end, talking about today, Allegheny has, and I think most of the companies have, taken the approach that we want to work through the state processes to get these projects sited.

So what I want to do is focus on that piece of it and talk about why congestion is important, even if the backstop authority isn't the main focus of it. So, throughout the process that we went through for TrAIL, one of the things that we found was that many

industry experts across-- especially in the east-- have agreed that transmission needs to be built. It needs to be built for reliability, to avoid rolling brown-outs or blackouts, to support load growth, to support renewables. I think many, many industry experts have agreed with that.

One of the things that we found is that when independent entities, other than the companies that are in the process of trying to build transmission, say that it's needed and here's why. It really adds a lot of credibility to it. It's another point that you can point to and say-- a point of information that you can point to and say, hey, this is a problem. It's something that a lot of different folks around are saying is there. So the DOE congestion study certainly plays a major role in that. It has a lot of information in it that really does help point to the issues that are out there.

I wanted to talk about the regulatory approvals. I would say, when you're building a transmission line, the regulatory and environmental approval part of the process has the most uncertainty in it. There's no question about that. Once we get, and we're still in the process of getting all of the approvals for TrAIL, we have a lot of work to do. We still haven't even started to build anything. But we're-- the process after regulatory approval is pretty well in our control, for the most part. Weather has a factor in it obviously, whether or not we can get steel, whether or not we can get labor. But they're all things that are very manageable that we can deal with.

However, the longer the approvals takes, we do have a limited amount of time to try to get these projects in. Again, I think why congestion plays a major role in it, pointing out the fact that, hey, we need to start thinking about this much, much sooner than we are today, recognizing that congestion plays a role. Eventually, if nothing else changes, as Mike Kormos said earlier, you're going to have reliability issues. You really can't separate the two. And thinking about what needs to happen to the system in the long run earlier, I think all of us need to do that, and certainly congestion is the major part of that.

So the support from DOE I think is very critical. The congestion studies do many things for us, but certainly it helps validate the existence of the problem. It helps identify kind of the geographic scope of the problem. And it serves as a good data source if folks choose to use it for the regulatory proceedings once projects are in the pipeline, so to speak.

So I'd like to just finish up by saying a reliable grid is, I think, everyone's goal. There are a lot of different players in this, but I think everyone is really focused on trying to make sure the grid is reliable from the regulators, to FERC, to DOE, to consumers. There's a big list of interested parties, obviously.

I've listened to-- this is the second panel, and I think we've all said the same thing, if you really listen. And that is that we need more generation, we need more transmission, we need more demand-side management. It's really not a difficult solution. We need them all. The problem is figuring out how much of each. And that's a problem that we're going to have for a long time, I think trying to figure out what's the right mix of each of the three and what's going to happen in the future. So predicting that is a difficult thing. The solution is simple, predicting the solution is probably the most difficult part.

Again, thanks for the opportunity to speak. I appreciate being here today.

David Meyer: Thank you. Next we have Lisa Barton.

Lisa Barton: Good morning. My name is Lisa Barton, and I am Vice President of Transmission Strategy and Business Development for American Electric Power. On behalf of AEP, I thank you for the opportunity to provide comments on this very important issue today.

When we contemplate the 2009 study, it's important to reflect on three things. First and foremost, it's important to reflect on our experiences to date, what we have identified specifically as challenges in the past. And that includes congestion, planning, as well as the operation of the system itself, because these are in fact interrelated. So it's difficult, if not impossible, to simply focus on one element of the equation.

We also need to do and make our best effort to predict the future. It's not enough to simply look in the past, and it's not enough for this study to be backwards-looking. It needs to be forward-looking.

And, finally, what I'd like to do is focus on some ways in which we can be proactive in our approach to congestion. Looking at the first in terms of our experiences to date, what do we know from our experiences? Well, we know that planned and forced outages impact congestion. We know that planned and forced outages are becoming almost impossible. The window of opportunity to take for maintaining our system today is becoming very, very difficult. I can't even tell you the number of outages that we have had scheduled that have needed to be deferred by all of the RTOs that we operate in. AEP operates in three RTOs - PJM, SPP, and ERCOT. And this is a problem that we see across our system.

Congestion, from what we've heard earlier on the panel, is an ongoing and elusive challenge. And the tactics that we have used to date really I don't think are working particularly well. We need to rely on generation dispatch to address shortcomings in our transmission infrastructure. And we've heard from a number of panelists that we have a reliability-centered planning model, and that is causing us problems.

When we talk about tomorrow, obviously it's a best guess, but it's critical that we sit there and roll up our sleeves and really try and figure out what some of the scenarios are going to play out for our future. If we fail to factor in what we reasonably think the future has in store for us, then we are most certainly going to fail in terms of how we set ourselves up. And congestion will do nothing but get worse.

So, when we reflect on what we can reasonably assume as challenges that we as an industry are going to have to deal with in the future, I think we've heard a lot of things on the panel today that we can all probably agree on. And that is carbon constraints, RPS requirements, are going to impact the economics of generation and are invariably going to change the flow of power across the system. As we also know, the current system is just simply not flexible enough to handle these changes.

So what does this mean for us? I'm going to leave you with a couple of thoughts. One, the tools that we have used in the past are likely not the tools that we're going to be able to use in the future. We're going to have to get more creative about our solutions. We're going to have to get more creative about how we look at the system.

Transmission should really be transparent to generation. It should be as transparent to generation and to load as possible. And that will likely require some changes in the way that we plan the system. What Ed had mentioned earlier I thought was really right on, which was prior to deregulation, prior to the establishment of the RTOs, utilities were really worried about both the economic and the reliability implications of all of their projects. That has been lost in recent years. We need to recognize that, without a robust transmission system, large-scale renewables are really not going to be as big of a part of our long-term solution as we might have hoped.

So, in conclusion, I think what we need to do is we need to move away from transmission being a reaction to generation. That's very much how we have viewed it to date. It has been a solution of last resort. It needs to be a solution and viewed as a solution unto itself. We need to not only determine where current congestion is but also look at trends. Why are areas getting worse? Why are some improving? And this really gets to needing to look at the system in a holistic fashion.

Ideally, rather than reporting in our future congestion reports on what has been the congestion of the past, we should be looking at how we can report on what's the congestion in the future that has been avoided because of the actions that we've taken to date. Thank you.

David Meyer: Well, thank you. Let me take this opportunity to say a couple things about how DOE is approaching this congestion study, particularly with respect to the subject of projections. The way we've set it up so far, we've said that this congestion study will look at historic and current congestion. In order to determine what you think it means, that does require you to engage, I think, in some forward-looking thinking. But it's possible to go further. We certainly do not-- at least I personally have come to the view that there's limited advantage to having DOE do its own projections, say, of the Eastern Interconnection, as we did in the 2006 study because those kinds of studies need to be done by a very broad, multi-constituency group. And we're happy to work with others to make that happen. But, if we do those projections, they're our projections and people don't necessarily feel much ownership in them. So that's essentially why I think we need those projections. Important though they are, they need to be done by a much wider, broader group.

At the same time, we are very interested in projections work done by others, whether it's RTOs, ISOs, utilities, states, or other kinds of organizations. And we are for-- we're interested in that body of material not just for the congestion study. But it pertains to a lot of decisions that DOE has to make, that my office in particular has to make about allocation of some of our R&D dollars, about planning some of the MADRI and MWDRI and NEDRI and those kinds of projects with states or groups of states.

So, for a variety of reasons, it's important to know what the different kinds of entities out there that are looking ahead with respect to transmission requirements, what are their

expectations? What's the future look like from where they sit? And, when they did these kinds of studies, what were the purposes of the studies, what were the assumptions that were made? Were the studies exposed to public comment or exposed to peer review? And if so, what was some of the feedback on those? All of that material is of interest to DOE for, as I said, to better inform a variety of decisions.

So we are thinking very seriously of launching a review of those kinds of projections. And that material would help to inform any future decisions about national corridors. It doesn't have to be part of the congestion study. It can still be done and be relevant. So I just throw that out. I want to be very clear that we are interested in that material. We take it seriously. We think it's important.

Let me go back to some of the questions here. I want to ask people about new patterns or new areas of particular concern in a geographic sense. Has the pattern of congestion shifted in some significant way since 2005 or 2006? Or has the pattern stayed the same but maybe become somewhat more severe? Or is it just you haven't seen much change? All of that-- we're mindful that some of these things do change as fuel prices change or the mix of generation capacity changes or the patterns of economic activity change. So have you seen significant movement in this process?

Ed Tatum: This is Ed Tatum from Old Dominion, and I'll just start it off. The simplest thing for us to think about today, and I'm glad Paul's got a copy with him that he can pass around of the 2007 state-of-the-market report. It shows the congestion charges. In 2003, they were 464. In 2004, it was 750. In 2005, it was $2 billion - $2.1 billion. What happened? Well, we had some fuel prices, so that was an issue. But, also, we had a significant unplanned outage. And boom, we experienced a tremendous amount of congestion. Congestion went down in 2006 from $2.1 billion to about $1.6 billion as we got that outage fixed and did some other things.

But I think it goes to the point of showing, again, a trend of increased congestion. We have seen it personally move out of our little Peninsula area because of all the additional non-reliability criteria-based work we did there. We are seeing it-- as Mike Kormos was saying, this is generally the west-to-east flows, and we expect those things to continue. We do suspect because of the way that we used to plan, that we're eating up the headroom. I like what Lisa said and that is, we're looking at trying to do planned outages. And we're having a harder time doing it because of just the grid is loaded to capability. So those are some of the trends that I would suggest.

Steve Naumann: Yes, there are trends. But I think you need to be very careful in your starting point. At least in PJM, there was quite a step change between 2003 to 2005. The fact that in 2004 you had a number of major utilities join PJM, and those utilities primarily, or at least their service territories, are primarily low-cost coal and nuclear. So if you go before that, you're not comparing the same system. And I don't think that's a fair comparison. Once you had that, and I think Lisa can confirm that, Lisa and Jim can confirm that, you had major increases in west-to-east flow as you went into a single control area using-- now having the ability to dispatch the lower-cost nuclear and coal.

So I think you have to look at a stable configuration before you start looking at trends. Having said that, congestion has not gotten better, it's gotten worse because one of the consequences of having, integrating the new companies with the lower-cost generation and some excess generation that was built during the irrational exuberance of the IPBs was that you had retirements. No, I'm not Alan Greenspan, I'm not responsible for the subprime crisis. We won't get into that, we don't have enough time to talk about that.

You had retirements in the east which, generation retirements in the east which, to some extent, exacerbated the congestion. And we're only starting to recover from that, both through price signals for new generation in the east and through the longer-term transmission planning.

So, yes, I think you've seen a trend of an increase in congestion, especially west-to-east. I think you have to look deeper as to the causes and then look at what solutions are being planned and then, if there was some agreement on this panel, looking at what the drivers are to the future as to what is going to cause the congestion. Thank you.

Paul Napoli: It's Paul Napoli from PSE&G. I tend to agree with Steve's comments and, especially, on looking at this data and drawing conclusions from it.

As far as myopically in New Jersey, our trend or our pattern hasn't changed. We know where the congestion is. It heads more towards the northern New Jersey area into that corridor and bangs up against a seam issue that we talked about earlier in the first panel. But I think the one thing that we need to do is, and we never want to do this, is exercise some patience for some solutions that are already out there. We talked a lot about the large backbone projects that have been approved by PJM Board of Managers that are in the siting process, some approaching the beginning of construction. These aren't going to get done overnight. But, when they are done, they are going to have a significant impact on congestion. And that trend will most definitely change. And, of course, it's continuing in the study process for future projects that will follow right behind those. So we're at that point in time where those things have not brought themselves in.

I'm also concerned with, when we look at transmission, I don't agree that transmission should be looked at as just an enabler. I think Jim said it very, very well that we have to have a balance of all three, transmission, generation, demand response, and that those need to be in the appropriate amounts in the appropriate places. How to do that, of course, is the difficulty. But I do believe that, without the right market signals, we are not allowing the other two variables to come into play. We can't just keep throwing transmission at the problem and expect to solve everything. We have to get some market signals right for the generation to come in. Generation has been struggling with that. RPM has certainly helped. I think we're starting to see some benefit of that now. But demand response is still a ways behind. I still think that those signals need improvement there. We have got to get all three variables working. We can't solve the simultaneous linear equations without being able to solve for all the variables.

Jim Haney: I guess the only other comment that I would make is I'll follow up something that Mike Kormos said in the first panel, and that is, you asked where congestion is changing, and it changes as the systems change. So I think if you don't take somewhat of a forward look,

you're really not going to see what effect congestion really has because if we put a project in, and Mike said it earlier, we put a SBC in a blackout, and it definitely changed the flows on the system, but it pushed the congestion point to another spot. So as the system changes, congestion clearly is going to change with it.

Lisa Barton: Lisa Barton with AEP. In terms of what we've seen with respect to congestion, certainly, congestion has gotten worse. All indications are that it will probably get worse before it gets better. The way that we look at and define congestion is, as a number of folks here have mentioned, very dependent on essentially where you're drawing the circle or the box around the system. I think, overall, we're probably under reporting on the amount of congestion that's out there because, I mean, there are certainly areas of the country where there is just no ability to move power from one area to the next. And we tend to look at it from within an RTO. We don't tend to look at it between RTOs as much, certainly even within SPP, west to east flows, east to west flows. They're just minimal within that footprint.

What Paul had indicated, which is wait and see how things will come out in the future, I think we need to-- if we are to go down a course like that, we need to be pragmatic about it and that it's not just a wait and see approach. We need to really consider it on a scenario-planning basis.

One of the questions that was raised at the earlier panel talked about electric cars and plugging them in in the evenings. One of the things that I think about and worry about is right now it's very difficult to take transmission outages. And a lot of the outages have to take place in the evenings and the weekends and so forth. So what is that going to do to the transmission system? We need to factor all of those things in. And that's why I said earlier, it's not just congestion, it's not just planning, it's not just the operation of the system. They really need to be looked at holistically.

Ed Tatum: Ed Tatum from Old Dominion. I just want to build back onto that as trying to take a look at the things that we have seen in the past. I think, and I can hopefully get a better source for you, but as I recall, there's a number of studies that have been done that talk about the amount of transmission that's been constructed in this country and how there's been basically a decline since 1978 or so in that regard. So I think that is something that you all should avail yourself of because I think it does provide a nice perspective and a basis upon which to make decisions, as Paul talked about, in getting the right balance between demand response, transmission, and generation. That being said, I agree with Paul, of course, the right balance of that concept. But I think that knowing how much you're starting off with affects the balance. And that gets me back to the concept of we need more transmission, we need more transmission, and we need some more transmission as we get more transmission.

The concept of it all fitting together, and I'll give you just one other piece of it, I said if you like markets, you like transmission. I just had to borrow that from you guys. But we talk about market power, and we talk about being able to face lots of sellers with lots of buyers, and being able to have that competitive model truly work is going to require the grid to be able to face lots of buyers and lots of sellers. We currently don't have that. Folks who are concerned with the excessive levels, what they believe are excessive levels

in market power, that's one area, way that would cure that. So that's another link that we have. It's not just demand response. It's not just generation or transmission trading. But it's the overlying of a competitive market, where before we had a vertically-integrated regulatory paradigm. Thank you.

David Meyer: Let me turn the microphone over to some of my colleagues, that is Joe Eto and Alison and also Lot Cooke.

Joe Eto: I have one information request and then kind of a more open-ended type of question. I wanted to follow up with comments that you made, Lisa, about the current challenges of operating the system in terms of scheduling outages just for maintenance and other types of things and how that's currently constraining operators. If you guys could provide that type of information, which certainly is within the boundary of the way in which the 2009 congestion study has been defined, sort of looking at current and historic operations, I think that would be very helpful to us.

Lisa Barton: Okay.

Joe Eto: Then I want to ask a more open-ended question, which kind of cuts across a number of these forward-looking themes. Scenario analysis was mentioned. Balancing between efficiency, local generation, and transmission. And I guess I'm interested in your thoughts about sort of the decision criteria that get used. And I'd like to frame it in kind of more of a devil's advocate kind of way. Under what scenario or what set of conditions or criteria does long-distance transmission emerge as the best solution? So how do you end up with that as the outcome in these types of planning processes, weighing these challenges of the balancing of different types of options for serving customers?

Jim Haney: I'll take a shot at that first. This is Jim Haney with Allegheny Power. I think that's a very good question. I tend to agree with Ed. We're still at the point where we're building transmission for reliability reasons. So we push the system to the limit to the point that we have to build it. And I think the question you're asking, and that we were all trying to get to is, once you get past that point, then how do you justify the different pieces based on the effect of the customer? What really benefit does the customer see? And I think that's going to-- there are lots of variables there.

I don't think there's a right or a wrong answer. That's what makes it such a difficult question. If you had a perfect view of the future, you could probably still have a pretty difficult time asking the question. Since we don't have a perfect view, I don't think there is a right or a wrong answer to it. And again, that's why I think most of us are saying we need all three because we really can't risk one or the other not happening. When we get to the point that we're sitting here talking about we've got too much generation, we've got too much transmission, that's a better problem than not having enough. And so I don't know that we want to get there. I don't know that we ever will. But it is a difficult question to answer. One should get over the reliability issues and, again, we're not there yet.

Lisa Barton: Lisa Barton with AEP. There are two things, I guess, that I would like to say in response to that question. One is just a little bit of a historic perspective, which is AEP's 765 system came well before its participation in the PJM RTO. This was part of what we did

in terms of worrying about our customers, their needs, planning both from a reliability and an economic perspective, what's in their long-term interest. And that's how that system came to be. That's one of the things that is challenging given just the structure of a lot of the RTOs. And if you look at the history of how they developed, they all developed very differently. They have different definitions in terms of reliability and economic projects. If you look at PJM, a reliability project in PJM is not the same thing as a reliability project in MISO. So you basically have-- it almost becomes similar to countries in Europe, which are operating with different languages. It becomes a barrier sometimes to look for these long-term solutions.

I'd also like to point you to SPP and what they have done with respect to their EHD overlay. What they have attempted to do with that overlay is to look at not-- they have an R-tep or a step process, which looks at the reliability needs of the system. And then they engaged in another effort, which is to look at more of the long-term needs. How should they build their infrastructure? Should it be 345? Should it be 765 or 500? And they came out-- their consultant came out with a number of recommendations, I think it was dated March 3 of this past year.

One of the other things to look at there, from an economic standpoint, is that Prairie Winds Transmission has contracted with Charles River Associates, and the results of that study looking at essentially a build out of a portion of that overlay-- I call it the, I refer to it as the figure eight in the western part of the SPP footprint. What essentially are the advantages of that? What are the economic advantages of that? That study will be published within the next week or so. And it will certainly be available on the Prairie Winds website, as well as the AEP website. And I think that that would be something useful for you to reflect on.

Steve Naumann: It's a good question. As someone who used to do these studies for a living, it sounds like a full employment act for engineers. But seriously, engineers can run all these scenarios and will be very happy to run all these scenarios. The problem is the decision making factor here. What are you going to be making your decision on? And I think as a region, as a country, we have to go through a paradigm shift here. As we're seeing with the TrAILCo line, and I'll try not to step on any ex-- well, we're not a party, so I guess I can't have any ex party contacts.

You've got to get the thing sited. And until and unless the law is changed in Congress that has total federal preemption on siting-- and please don't jump on me. I'm not saying-- I'm not going here and saying that that should be changed now. You've got to get this thing sited in the states because going through the process, the FERC backup process, simply will be such a long time that, as we heard from the issues in Maryland, you're going to have problems. What I think you need to do is get the buy-in from the states as to what these criteria are going to be to get these lines sited because historically, and I'll just speak for Illinois, we have a statute. And the statute says you have to show need. And that has some interpretation to it, some flexibility. And it needs to be-- I don't know if the statutory language is exactly right, but essentially the lowest reasonable cost. And when you try to marry those two from what we've looked at, basically a reliability regime, and you could always justify an economic project under those criteria to something that is far more uncertain assumptions-- a holistic study and the parameters changing far more than

they used to in the future, being far less stable. That may be a very hard thing to do under the current laws.

And so I think the studies are easy. We could crank out lots and lots of studies. And we can come up with what people believe the decisions should be. But to get it out the door will be a very hard thing, unless we get the regulatory process to work with those studies. So I probably overreached on my answer. But I'm trying to be practical here. If you want to get it out the door, you got to do things to get it out the door.

David Meyer: Steve, I want to be sure I understand what you're saying here. Do you mean that the regulators themselves need to be more directly involved in the study process, I mean, shaping some of the scenarios just so that the questions that they are interested in will be answered by the study?

Steve Naumann: I believe that buy-in at an early stage is always more helpful. We have found that-- and I think all the utilities here who had to build have found that has helped in siting an awful lot. But there's really a second thing, and that is I think we have to look at what the individual state statutes are. And again, I'm not advocating a steamroller approach here. But there needs to be an understanding of what the needs-- you know, they have statutory restrictions. They have a state statute. And the Commission has to abide by that statute, or else there's a court of appeals or a state Supreme Court, which will tell them that they don't. And so all of that needs to be kept in mind. And the more you can work with the regulators on this, both to get by and to understand what the needs are to get something certificated, I think the better chance we all have of getting the transmission that's truly needed for the region, for the country built.

David Meyer: Now, we don't have regulators on this panel. And I see some in the audience. And I don't know whether OPSI, in its meeting, will allow us time for those regulators to make comments on this. But if they may wish to comment later to us in some way or other-- But as I understand it, a lot of regulators would feel that they should not or cannot get involved in that planning process to that degree because they need to hold back in order to maintain a neutral position if projects that bubble up out of the planning process are put in front of them.

Steve Naumann: That's a fair point. I would never wish to speak for my regulators. But I do think there are ways to provide information and feedback, if not on particular projects, on processes and other such things, that would be helpful because I mean, Jim, again, we can't get into the specifics, but Jim's got TrAILCo. He's going through a siting process. And understanding and having feedback on the needs to get that certification the earlier that can be done-- because again, having a plan is great, but having it executed is, in the end, what needs to be done. And I will recommend a book, The Soul of the New Machine. It's an old book. It's from the '80s. And it's about computers and digital data general or digital equipment. But this term, get it out the door-- because you can engineer the thing all you want, but until you get it out the door, you don't make any money. And until you build the line, it isn’t there. And it's not serving the purpose.

Paul Napoli: Can I just add to that too, if I could? In PJM we have a very open stakeholder process. And it is not unusual that regulators are participating in the planning committee and TEAC committee meetings where we talk about these projects that are going forward.

And they have the ability to do that either in person or by phone so that I think that's where the client needs to be. I would encourage that to continue to be there because I think it is, as Steve pointed out, very helpful to have that in the early stage.

If I could go back to address the initial question, I kind of started this very quickly. I think Jim hit it on the head on the difficulty of answering that question. But when I go back and look at where we are right now with regard to transmission build, we are building. I know in my company's case, we are building a lot of transmission. And for the size of our company, we have one project alone that is going to double our net worth to transmission over the next five years. And that's just one of several that will be coming down the pipeline as other criteria violations need to be resolved. And so, we are building it. And as I understand, Ed, you like transmission?

Ed Tatum: Sure, thanks for building it for me.

Paul Napoli: What I am concerned about is, again, we are-- there is a missing ingredient. And that missing ingredient does go back. It was stated at one time, the fully-integrated planning that existed when it was regulated-- the missing ingredient goes back to making sure the market has time to react to signals because if you build all the transmission in the world, it's not going to create electrons. At some point in time, we're going, and I'm concerned about it in Northern New Jersey, we're going to have reactive power issues. We're going to have voltage support issues. They only can be addressed by putting in generation. At the same time, demand response needs to come there because demand response, will that solve our problems for ever? No. But it will buy us the time to solve the problems the right way.

And there's a book-- I'll recommend a book also for you. And this one's from the '90s. So I'm going to one up Steve. It's the Bottomless Well. And, really, what this tells you really is it tells you a lot about mostly into the oil industry. But what you'll get out of this is the fact that, and it has very undeniable data that shows, that the more demand response increases, the more efficiency we get, the more we use. It's a paradox. It's inevitably there every time we say something. You know, I've read that book, and I went back and I looked at it, and I'm guilty of it myself. I made some improvements in my home by putting in a more efficient central air conditioning system. Saw my usage drop, and said, oh, great. I'm going to get that other flat-panel screen TV. Or I'm going to put another refrigerator in. I'm guilty myself.

Now I'm at the advantage, I get to call and constantly complain about my electric rates because I live in JCP Nell's territory and not my own. So I get to go ahead and do that. And I do it all the time. But the fact of the matter is, with all the demand responses in place, and there's quite a bit, the fact that the line store PM auction option, if I recall-- I don't know if Mike or Steve are still in here from PJM-- but it was something like 900 megawatts got bid in. That's a lot, okay. So the fact is it's coming online. We'd like to see a lot more. But despite that it's coming online, in New Jersey we're growing nearly a 2% annual demand. It's not all going to get met just by transmission. So we've got to find that balance, as Jim started before and then Lisa said a more holistic approach. We still have got to get there. And I don't think-- if I knew the right answer, I'd be Steve Naumann, but I am not him. I don't have it all right now.

Ed Tatum: And just to wrap that up, Joe-- it's Ed Tatum from Old Dominion. Again, we talk about the intricacies, and Paul's right, it's the interaction of the market as to what's going on here. So quite possibly you'd want to explore how the markets are doing. Do we have to have, for instance, an administrative construct to simulate scarcity pricing because we don't have adequate transmission to actually have resource inadequacy? The transmission binds before the capacity does. Do we have to have an administrative construct for capacity? Do we have to have other things that we attempt to put in place? I think that the assessment of market operation and mechanics of that could be helpful. And I don't have a specific bright line. But it could be the scarcity pricing if you think about it.

David Meyer: Peggy, do we have people--? We are scheduled-- let me explain to the group, we are running up against the schedule for on our agenda here, that is this panel is scheduled to end at 11:30, but that is to provide time for individuals to make presentations if there are individuals who wish to do so. Has anyone stepped forward to say they wish to make such presentations?

Peggy Welsh: No.

David Meyer: Okay.

Peggy Welsh: No one has come forward to ask for time to speak yet.

David Meyer: Right, right. I am going to let this panel run on for a while because we are on to some important stuff here. And if there are members of the audience that want to make individual statements, let Peggy know and we will make sure that you get your opportunity before we get to noon. But POSY has only given us until noon for this meeting, so we need to break sharply at noon. Let me go back now to this panel's discussion. Alison has a question she wants to raise.

Alison Silverstein: Thank you. Alison Silverstein, Consultant to the Department of Energy. I have two questions and at the moment no literary recommendations. The first question, I am very pleased to hear about your faith in markets and signals, but understand that the Department has to do a congestion study that addresses the entire United States. So I have two related questions for you. Since a significant chunk of the United States doesn't have functioning real-time markets, what signals do we need to look for outside PJM and MISO? And, second, how big, all of you in the prior panel advocated regional and interregional planning, how big is your region? What states? What chunk of the United States and/or Canada are we looking at when you all talk about let's do big planning? What are we talking about?

Lisa Barton: Lisa Barton with AEP. I'll take a stab at answering those questions. What signals outside of PJM and MISO? I do think we are not reporting on all of the congestion out there. I mean congestion assumes that there are flows between areas. And there a lot of parts of this country where there are absolutely no flows. And I think it's probably somewhat difficult to weed through all of them and kind of find out where essentially those hard constraints are on the system. But I think if you do talk with a number of the utilities and probably large utilities out in the west like Mid-American so you can actually-- they can tell you where there is just absolutely no ability to move power across the system. In talking with some of those other companies, as well as the RTOs, they can tell you, certainly, where there is just an inability to move power, say west to east in their system or outside of the system.

How big is your region? With respect to AEP, we look at it a couple of different ways. We look at it from the perspective of our operating companies, which is certainly, it's an eleven-state region, three RTOs. We are also active, because our eastern territory bumps up against MISO, we're also very active in understanding what's happening in MISO because that certainly affects our system to the extent that the AEP system, for example, was not extended or there aren't improvements made to that interface. The customers in the western part of our eastern system really are harmed by that.

We have recently really taken a very broad approach with respect to what is the size of the region that we should be worried about? We really do think it's national in scope. We really need to start tackling the problems that we have between the regions, whether that be in parts of the country where there isn't an established RTO or between RTOs themselves. One of the things that we have done that you may have seen, we at the request of AWEA, basically created an EHV overlay, which is thought to harvest basically the wind potential that AWEA saw. I think it was about 20% of the nation's energy supply they were looking to secure from wind resources. And so what we did in that analysis is look to see, all right**,** how much EHV transmission would need to be built to harvest that amount of wind?

So, in answer to your question, what's the size of the region? There's really a couple different ways of looking at it. If you really want to get to a full and open market, if you really want to eliminate congestion across the nation, you really have to look at it on a national scope and scale.

David Meyer: Anyone else? Steve?

Steve Naumann: Well, I agree with Lisa that you have to look-- I mean if you're looking to optimize the entire country, you have to look at the entire country. Having said that, first of all, what's the purpose statutorily of the DOE congestion study? And I don't think it's to get into changing the transmission planning of the entire country. That to me is a decision that belongs in congress. I suspect it might be controversial but that's what they're paid for. So if you believe this is a national problem, it needs to be addressed on a national level and at a whole different level.

I guess my second observation is in answer to the earlier question. Doing these studies is not a trivial matter. It's a very, very difficult matter. I think you need to concentrate first on what's doable, rather than theory. We've seen, as Ed has mentioned with carrying around his little red book of congestion, there's lots of congestion that's occurring in PJM. And PJM has worked very hard to develop plans to-- first on a reliability side. And they're in a large build out. That's a difficult process getting those lines approved, getting them built.

I think before we start tackling something that hasn't been fully debated through a national energy policy, we need to cut off the chunks first and deal with them. And yes, between the RTOs, deal with the seams. But, I am probably showing my age, David, wasn't there something in the 70's--? What was it called the National Grid Study or something like that?

David Meyer: There was a national grid study in 1980 as part of the legislation that passed in '78.

Steve Naumann: Right. So, I think that's a nice theory, and we didn't build a national grid. So, I guess, Alison, in answer, there's a theoretical answer and there's a practical answer. And right now I think we ought to concentrate on getting done what we need to get done on projecting the congestion throughout the different regions, working with the existing

studies that the RTOs, the companies, and the states have done, and reporting on that, and having the national debate on what is best for this country, and looking at the outcome of that. I mean, Lisa's right. If there's going to be a national decision to have 20% wind and to deliver wind from the Dakotas to the east coast, that's a very serious issue and should be debated. And if that's the decision that our policy makers make, then we've got different ground rules and it has to be implemented. But until that time I think let's look at what we can do and think about what we should do.

Alison Silverstein: We just had five different commissions say, you need to do regional planning, and you need to do big regional planning to understand where the problems and the congestion are and what the potential range of solutions are. So I'm just trying to follow up on that. I agree with you that you need to tackle what you can tackle, but after five Commissioners and their representatives tell us, plan-- look big, look at big regions. And one of them even said look nationally. So how big do we look? You guys are the ones who are going to have to send staff to work with the RTOs and in the regions where there are no RTOs to undertake this planning. How big is the region you're willing to tackle, that you think is going to affect the congestion in your chunk of the neighborhoods?

Ed Tatum: This is Ed Tatum. I'll also give you a run at it. PJM has just been implementing their 8.25 '09 planning process and doing a good job with it. And in there, we have a regional planning process across the entire PJM footprint. Part of that, too, is sub regional, and in sub regional it gives us some flexibility to determine really how sub is a sub region? Is it just going to be one transmission-owner zone or is it going to be a couple? And there's flexibility there to take care of those issues. As far as PJM goes, we don't only plan the transmission system in PJM, we look at reserve requirements, capacity, resource requirements, and the adequacy there. And for a one in ten loss of load probability, PJM has been looking at the amount of the capability that's from the world, that area that's outside of PJM. And I'm happy to announce that at PJM, we are the world. And so we might have gotten big enough from a resource adequacy planning standpoint, quite possibly, that could be a benchmark for determining the size of the ultimate regional grid. But you still, Alison, I think, would need to have an ability to look at the sub regions down to whatever granularity does make sense based upon that case by case of specific situations.

Alison Silverstein: Okay. Agreeing with you-- this is Silverstein. I agree with you about the value of sub regions and granularity, but last I checked, thanks to all these upgrades, PJM's fixing to lose at least 3,000 megs of exports to New York, and you all are still-- and there's New England sitting up there hungry. And you've still got the Lake Erie loop going on. And MISO is sitting on the far side of AEP and others so that this part of the PJM solution. How big are you planning? Is New York going to be part of your planning? Is MISO going to be part of your planning? PJM, I don't think does this all alone. How big is your planning region?

Ed Tatum: This is Ed again. And I will agree, as the first panel hit on, and they are completely right, we've got to take care of the seams. And as the thing moves on, I mean you might think about how it works. Paul, maybe you can speak to it, but the concept of the seam between you all and New York, I'm not sure how big of an issue that might be for AEP. But I think that you go back and forth and take a look at the different levels, so you can have an ability to, if you will, take your cookie cutter and go down and say this is a reasonable amount of geographic and electrically-connected area to include.

Paul Napoli: This is Paul Napoli. Let me just follow up with that. First of all, what is big enough? Between the foot print that we touch now, with the expanded PJM since AEP and ComEd and others have joined, we reach from the MISO border all the way to New York seams

to the New England border. That's big enough to solve a large portion of the northeast United States' congestion issues, working in that large an area. But we don't have the fine-tuned interregional planning that we need.

We heard earlier with Commissioner Butler, one of the most important seams that we have is with New York City. This is, right now, dysfunctional. We are going to talk a little more about that at the OPSI meeting tomorrow. And right in New York City is this big black hole that constantly just sucks energy, so there is an effect to all of us. It affects everyone at PJM. It's there. It's a fact. It's going to go there.

You know, the one thing we can't do, we cannot legislate, we cannot regulate, and we cannot change the laws of physics. It's going to go. And the questions is, how do we do this so that we do not undercut and undermine reliability, we do not unduly or unfairly discriminate against customers in all of the regions in terms of what their costs are going to be to supply this transmission and this reliability? And how are we going to make this a seamless and transparent process? Those are some big challenges. But, yes, we are touching enough geographically to solve this problem but now we have to get our hands on this problem.

Lisa Barton: Lisa Barton, AEP. In the end, I think you really do have to set your aspirations high and think big. You do have to think about the loop effect. You do have to think about how things affect New England, New York, PJM, MISO, SPP, and really almost start to look at things at an interconnection wide basis. Now, one of the groups that's starting to look at that, JCSP, is really starting to roll up their sleeves and figure out how they should be looking at the system. And, to some extent, that's the precursor to looking at it from an interconnection-wide framework. That has TVA, SPP, MISO, PJM, New York, ISO, New England and Duke all participating in this effort. Now, it's a great effort in a lot of regards. Does it have teeth is, I think, one of the things that is a challenge. What will come out of it? How much is just agreed to and settled on by consensus? And is that necessarily the way of getting to your-- to the right solution is probably something that needs to be debated and will probably be debated over the next day and a half here across the hall. But I do think that it's a step in the right direction.

David Meyer: Okay. That exchange, I thought, was very fruitful and useful. Lot, you had a question you wanted to raise.

Lot Cooke: Yes, David. I think I'm hearing this. And I'm just curious that the NERCs mandatory reliability standards and the penalties that they can impose for violation of them. Is that making or will it make siting at the state-- or permitting at the state level easier than it had been prior to the passage of that law?

Steve Naumann: I don't believe it's going to make that big a difference, because the companies that were building transmission always abided by those planning criteria. That was, as I said earlier, again in Illinois, you have to show a need. You have to show lowest reasonable cost. The need on a reliability planning was always based on an objective criteria. Now as you change those criteria, you might justify other things. On the margin, maybe it gives you cover but it's now an enforceable standard. We always justified our-- the siting based on those objective criteria. Again, I think the more difficult case is the what we call an economic or efficiency case, where you don't have a hard and fast standard to measure against. And there you get into, again, both state laws and the allocation of benefits and costs as to whether things will be-- how it meets the state law.

Alison Silverstein: One more question for you, building on that. The two different issues on how they are received by the state commissions when you go to them for a siting issue. The first is

building on Lot's question-- these are the same questions really, does the state commission care whether NERC reliability standards are-- does it pay more respect to a transmission proposal if there is, you can waive the NERC reliability standards, say that this should be built? And related to that does, since the DOE 2006 transmission study was published, does citing the DOE study to say that, look DOE, a national study found that there is transmission congestion here and we need to build it. Does that make any difference? So these are both going to the question of, does anything make a difference to a state commission other than its own rules and regulations that have been established for a long time? Thank you.

Steve Naumann: I really think that's probably better asked, would have been better asked for the prior panel, Alison. Again, I will opine based on our experience in siting in Illinois and Pennsylvania. There's a law in each jurisdiction, and they're mostly the same. The NERC standards and the prior regional standards and other such things are fairly black and white. I think it makes a decision easier, both because its basic reliability of service and you can go hand a study and say, in 2012 there will be a violation of this planning standard, therefore, I have to do something. Now, you may get challenges on what the something is.

Do I have to build a line? Can it be done all by DSM? Can we get rid of flat-screen TVs so the load will go away? I'm serious. I think it makes that part of the inquiry easier but you still have to then get into the alternatives and whether this is the right solution. Having a bright-line test, I think, always makes something easier because, again, if you're writing an order, it gives you something to objectively point to and say, Witness A testified and presented studies that in 2012 this line will be in violation of this planning standard and needs to be corrected. But having them mandatory as opposed to the prior regime, I don't know that that made all that big a difference, at least in our experience. And state commissioners can opine to prove me completely wrong.

David Meyer: Peggy, do we have anyone who wishes to speak on their own behalf? Peggy nods no. All right, let me poll the audience then. Anyone want to raise their hand and make a presentation? Okay. Well, thank you to the panel. That was very interesting. We appreciate your insights and presentations.

Ed Tatum: David, we thank you.