

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

**Las Vegas, NV
August 6, 2008
9:00 a.m.-12:30 p.m.**

Transcript

David Meyer:

Well, good morning, ladies and gentlemen. I'm David Meyer from the Department of Energy and I will be chairing this workshop. I'm going to make a brief presentation explaining our views on our plan for conducting this study. And--but before I get into that, let me introduce a few of my colleagues here. I'm accompanied by Warren Belmar, who's sitting next to me at the table. Also, we have Elliott Nethercutt, who's one of our staffers who's helping with the arrangements here.

And then there are some other associated people that I want to introduce. We have Mandy Warner from Energetics--Energetics is the company that is helping us--and also Mary Lee Blackwood is from Energetics, helping us with some of the logistics for these meetings. And also, today we have with us Joe Eto from Lawrence Berkeley Lab--and many of you know Joe from other analyses that he's worked on--and also Alison Silverstein, who has worked on previous projects with the Department of Energy.

So, let's turn now to the plan for the study. The Energy Policy Act of 2005 directs DOE to conduct a Transmission Congestion Study every three years. We did the first one in August of 2006, so we're now commencing the preparations for the 2009 study. So this, today's meeting is the fifth of six regional workshops that we're hosting. There will be another in Chicago in mid-September that will focus primarily on the PJM footprint. But in addition to these meetings, these workshops, the DOE will maintain an open-door policy throughout the period when we're gathering material for the study. And so we will be very happy to schedule bilateral meetings with states or RTOs or utilities or other groups, non-NGOs. Anyone who wants to come talk with us about congestion matters, please do so; we're happy to have those discussions.

Let me speak a little bit about the relationship between the study and the national corridors. The EPAct authorizes but does not require the Department to designate National Corridors. And so this, what we're talking about today is the 2009 Congestion Study. Whether it will have any connection to future National Corridors, that is something that essentially the new incoming administration will have to decide how they want to deal with that. And so it's--we simply can't go much further on that subject at present.

So we're hosting these workshops to explain our perspective on conducting the study, what kinds of information we're looking for. We particularly ask your help in identifying publicly available data and we--if you have opinions about how to assess or evaluate the character and significance of congestion from that data, please tell us. In some areas of the country, there is an analytic challenge of distinguishing between the effects of

technical limits on line loadings and possible contractual limits on those same lines. That is, in some parts of the country, the lines may not be loaded up to their technical limits, but nonetheless, they may not--that capacity may not be available because it has been committed in some way or another on a contractual basis.

The 2009 study will focus on recent or current congestion. We are not yet in the process, unlike the 2006 study when we did prepare projections of, electricity flow projections and associated congestion, we are not doing those kinds of projections for the 2009 study.

Also, as many of you know, ERCOT is excluded by law from the areas to be included in the study. For the West, we will once again work with WECC and the Transmission Planning Group under WECC's auspices to review recent transmission planning studies and congestion-related data for the West. And, somewhat similarly to our 2006 study in the East, we have engaged, or Lawrence Berkeley Laboratory has engaged, a contractor to perform a similar kind of analysis for the Eastern Interconnection.

So at today's meeting we will have two panels. One will be a--the first panel will be focusing on more policy or framework kinds of questions for the study. The second panel will be more technically oriented, people who work in this area on a more technical basis, and they will give us their views on how is it--where to fill in the boxes in this framework that we will be discussing in the first panel.

There will be an opportunity at the close of the meeting for non-panelists to make brief statements, and so it's, I welcome any statements that people want to make. You can give thought to between now and then as to whether you wish to make a statement.

In any event, we request all interested parties to submit written materials to us. That is, the dialogue that goes on at these workshops is important, and it's valuable. But the, the essence of the material, from our point of view, is in the written submissions. And in the written material you have the opportunity to submit material at whatever length you choose. And you can, if there are previous studies that have been done that you want to bring to our attention, you can provide those to us. So we're--we urge every--all interested people to provide that material.

And also, let me add that providing it electronically is by far the best way to go. Any hard copy material that we receive has to go through a screening process that was developed after the anthrax problems, and essentially what happens is that those documents get baked, and a lot of times they don't survive the process that well. The material is frequently not legible or the paper is badly affected. In any event, it's far better for everyone if you submit it electronically.

In the 2006 study we identified several areas of the country as areas of concern from a congestion perspective. And so we invite the panelists to bring us up to date on trends in those particular areas since, say, 2005. If you want to go back further than 2005 and talk about longer-term trends, well, that's helpful, too. But and also, then I would say are there new areas of concern with respect to congestion that you want to bring to our attention?

And so, in terms of our schedule, from now through, say, October 15, we're going to be collecting materials that people bring to our attention and other documents that we know that we want to locate. So we'll be essentially in document collection mode through that time. We will start digesting that material. We're working on that already because we don't want to suddenly get burdened with just an avalanche of material. But we're going

to have to close the window shortly after the first of the year and start drafting the actual report.

So by April or May we will be into serious writing. By June and July we will have a document that is in the review process, and so publication will be in August. Here is the website and other information about submitting written comments.

So with that, let's get started on the panel's discussions. Thank you very much.

I'm going--we will start the first panel now, and I will ask Rebecca Wagner from the Nevada Commission to start us off. But first, thank you for hosting us here in Nevada, and we're very glad to be here.

Rebecca Wagner:

Thank you and welcome to Las Vegas. And for those of you that are staying over, I encourage you to engage in as much gambling as possible. If you all haven't figured out, this is the lifeblood of our economy in the State and it's the economic driver of the State. And it continues to be, if not one of the fastest-growing counties and, including the State, we flip-flop back and forth with Arizona. So clearly, transmission planning and ensuring generation to keep air conditioning on throughout the summer and to keep the slot machines going is of utmost importance to us, our Governor and our Legislature.

I'd like to thank DOE for inviting me and Brian Whalen, who you will hear from later. He's with our two investor-owned utilities. And I want to recognize that DOE is fulfilling its responsibility pursuant to EPAAct and I will respectfully resist the urge to go down to the National Interest Corridor designation process. But I do have to brag that we were able to be undesignated, which was very thankful on our part.

Just based on what I was told I should be talking about, I just want to touch on--I'm clearly more of a policy person than I am an expert on transmission. So I want to just touch on what's occurred since 2005. As I just said, Nevada has two investor-owned utilities, Nevada Power and Sierra Pacific Power. They are owned by, the parent or umbrella is Sierra Pacific Resources. So we don't have a lot of entities that are--well, we have a lot of entities appearing before the Commission--but as it relates to investor-owned utilities, they take up the majority of it.

Both utilities utilize our integrated resource process, which has been beneficial for us to be able to ensure that the transmission is constructed and generation as well. And Brian can probably describe this better, but I think our Commission, even before my time, has consistently approved transmission projects. And we're talking hundreds of millions of dollars and hundreds of miles of transmission. As you can tell, Las Vegas grows quickly, and it is a challenge to keep up with that growth.

One of the big issues that we're facing right now that everybody seems to be trying to tackle, whether it's the Legislature or the Governor's office or the Commission, is that the two investor-owned utilities are not interconnected, the two service territories are not electrically interconnected. And with a very aggressive portfolio standard, we have abundant geothermal resources in the north and abundant solar resources in the south, but no way to swap them out. So one of our biggest challenges is trying to move forward to get that interconnection between the two utilities in place sooner rather than later. No pressure, Brian.

And two years ago we conditionally approved Sierra Pacific and Nevada Power to construct a large coal facility in the eastern side of the state. And along with that coal facility, there's an associated 250-mile, 500 kV transmission line connecting the two

service territories. Due to a number of reasons that I won't go into, the project has been delayed until the 2012 to 2015 time frame and, obviously, until we have a better understanding of what the carbon legislation will be.

We also have an independent power producer known locally as LS Power. They have a virtually identical project to what the utility has proposed. And they've recently received their finding of no significant impact, or FONSI, from the Bureau of Land Management and for the transmission route. And it's my understanding that they are going to try and move forward with just building the transmission portion of the project. So I look forward to see what happens between our utility and the independent power producer, but it's important for us in fulfilling our portfolio standards, as well as maintaining and utilizing our own indigenous resources.

With regard to Nevada's policy objectives, we have strong bipartisan support for the development of renewables. We--our first portfolio standard was enacted in 1997 and has been modified and will continue to be modified, I'm sure, in our next legislative session. But right now the target is 20% by 2015. And within that 20% there is a portion for energy efficiency and demand-side management measures so that we can further that goal as well.

Our new Governor, Governor Gibbons, recently created what I call RETAC, which is an acronym that stands for Renewable Energy Transmission Access Committee. This is to address transmission-related issues to the development of renewables. We just commenced Phase II, and this is similar to the projects that or the efforts that we've seen in California in renewable transmission initiatives, as well as the Western Governors' Association WREZ Project, and I can't remember all the acronyms appropriately.

So the Commission and I personally am participating in the WREZ process as well as monitoring what's going on in California as well as other states. And I strongly believe that, in order to address some of these congestion issues that we are facing or potentially facing, we need to take a regional approach to resource planning. Not that we could all coincide an integrated resource planning process, but be aware of what other states are doing, what they need. Clearly California has a huge influence on what happens in Nevada. And clearly, they are pursuing more renewables, and we have an abundance of them.

So it's my objective is that the Commissioners work collaboratively with our neighboring states and we're starting to see this process. And I have to commend the Western Governors' Association through Western Interstate Energy Board, the energy arm of that, for really initiating and working and bringing us all together as Commissioners to further this.

Just in closing, we're a fast-growing state. We don't have the population numbers, and I think we're close to 2.5 million, but we grow very rapidly, and that creates a huge issue for infrastructure. As you may discover driving around Las Vegas, it's not exactly keeping up with the demand on the roads, but as it relates to transmission, I think that we've done a good job, the utility has done a good job of keeping up with that--planning ahead and avoiding the congestion issues that we've seen in other regions in the country.

And I look forward to participating in this process more fully. And my biggest point and the point of encouragement to DOE is look at what we're doing on a regional basis. I think we are all trying to work together and there's things that or policies in state that seem to be consistent now throughout the West that I think will help address the congestion issue.

David Meyer: Thank you. Let me turn next to Linda Szot from New Mexico--Lisa Szot, sorry.

Lisa Szot: That's okay. I appreciate the opportunity to address you on changes that have taken place in New Mexico since the Energy Policy Act of 2005 and the United States Department of Energy's August 2006 study on electric transmission congestion, as well as an opportunity to offer comments for your consideration in your preparation of the DOE's 2009 Congestion Study.

An overview on RETA--by far the most significant changes that New Mexico has had since 2005 is the creation of the Renewable Energy Transmission Authority, or RETA. We were created during the legislation of 2007 to be the first entity in New Mexico officially delegated responsibility for focusing on electric system transmission infrastructure planning, financing and implementation.

RETA's work started in earnest in the latter part of 2007 with appointment of the RETA Board Members, followed by me being hired in 2008. To accomplish its objectives, RETA will rely on revenue from the projects it initiates rather than full faith and credit of the state's treasury by selling bonds payable from project revenues. During the upcoming 60-day legislation session, commencing January 2009, the New Mexico legislation may expand RETA financing to include loans from revolving funds and other financing tools.

One of the more interesting aspects of RETA is that at least 30% of the transmission project's electrical energy must come from renewable-derived energy. Additional electricity may come from other traditional resources.

Other states are rapidly moving to expand their electrical infrastructure to accommodate increasing emphasis on renewable power and system reliability. In conjunction with New Mexico's statutory requirements for public utilities to gradually step up the amount of renewables in their portfolios over the next few years, RETA signifies New Mexico's desire to become competitive in this emerging market.

RETA supports the goals of facilitating the development of energy corridors to relieve congestion, improve reliability, and enhance the capability of the national grid to deliver energy. In particular, RETA supports the development of renewable resources for electricity by developing electric transmission lines that will take these products to market.

New Mexico's significant wind and solar resources are driving the need for strategically placed energy corridors to meet in-state electricity demand, as well as export demand for clean energy to other states having a renewable portfolio standard requirements such as Arizona.

New Mexico now has a total of 496 megawatts of wind producing green power making New Mexico the 10th ranked state for developed wind power capacity. This capacity will continue to grow with an additional 210 megawatts planned for construction. The wind farms are located in the eastern half of the state where the best wind resources are located.

Another boon that we're seeing in New Mexico and the renewable energy development is anticipated for concentrated solar power technology utilizing world-class solar resources, which are in the southwest part of New Mexico. And New Mexico is diligently working towards developing renewable energy resources and getting these projects to market.

The creation of federal identified routes will help in meeting New Mexico's goals. RETA and the New Mexico Energy Minerals and Natural Resources Department, or called NMEMNR, believe that corridor 81-213 may be effective in aiding the development of new solar and wind resources in New Mexico and that it is a route that will serve the purpose.

Much of the corridor is supported by regional planning efforts in New Mexico that are considering transmission facilities such as SunZia High Plains Express. Corridor 81-213 is also well located to facilitate future development of solar and geothermal resources in the southwest and the south-central regions of New Mexico and will assist the development of wind resources by providing a way to move the power west.

The PEIS that has been prepared under federal auspices and is related to the corridor designation has not included New Mexico's preferred route. That route involves very little federal land, and the PEIS does not touch upon assistance that federal land management agencies can provide. By contrast, RETA and NMEMNR's preferred route involves federal land along the northwest. RETA and NMEMNR also recommend a corridor in the west-central region that is not discussed in the PEIS. This corridor represents a path for transmitting wind power from eastern New Mexico to loads further west. The PEIS also does not adequately have environmental aspects in New Mexico and should lay a better framework for state and federal cooperation.

Coordinating state and federal participation in consideration of environmental impacts offers several advantages. First, it would provide for coordinated right-of-way efforts among the federal and state agencies. Second, it would afford uniform operating rules. Third, it would offer a unified point of contact for communications. Fourth, it would allow for accelerated processing to avoid delays. And fifth, it would enable required changes to land management plans to land use management plans for the agencies to include designated routes.

Unfortunately, as testified by NMEMNR's secretary Joanna Prukop and her testimony to Congress on April 15, 2008, before the House Natural Resources Committee and two of its subcommittees, the PEIS contains only a limited consideration of the impact of the energy corridors and does not consider future impacts that would directly impact the environment.

New Mexico recognizes that energy corridors are integral to our nation's energy security, and New Mexico wants to ensure a balance between our energy needs and our environmental resources. New Mexico stands ready to work with the federal agencies and asks that they closely work with us, particularly RETA and NMEMNR, in meeting our national energy objectives. Thank you.

David Meyer:

Thank you. Let me turn next to Lisa Manz and I'm going to ask--Laura Manz. And I'm going to ask Laura to introduce herself because I'm not sure exactly which organization she represents.

Laura Manz:

(Laughter). I'm in transition. I'm a confessed panel hopper from the afternoon to the morning, and I'm also leaving SDG&E at the end of the week. I'll be starting a job with the California ISO. So it's been sort of interesting for me, because you know how speakers have to come up here and they do a disclaimer like, "These are not necessarily the comments of the company." Well, these comments have been ratified by all companies, so you know it's kind of like I've got a foot on each banana peel this week.

But I'm really happy to be here. It's kind of an exciting time, especially in California, and I'm really happy some of my friends came here to support me.

It's interesting to me that, first of all, we're still working our way through how to define congestion. I think we need to somehow ease ourselves into that congestion is not a contractual phenomenon. That we are now in the era of open access, and open access means that you have open access, which means it's the physics that deem the congestion.

And so, if we look at, "What do we really need to do when this is all done?" it's keep the lights on economically and reliably. I used to be a system operator, and it was sort of like "Lights on, frequency around 60," and I think we somehow forget that reality check as we're moving through all of this.

And so what happens is as we're trying to work on planning toward a reliable system, what we need to do is make sure we think about congestion in a way that says we have too much demand, not enough generation or not enough transportation. And it's those three things together that define whether we have congestion. And I've seen some definitions that say, well, if you have generation that can solve your reliability problem, it means it's congestion. And if you don't have generation, it means it's a reliability problem. So they're sort of trying to slice this between economics and reliability.

I've heard Rick Sergel say, "Today's congestion problem is tomorrow's reliability problem," and I really believe that's true. I also think we need to be very creative about the three ways we look at solving this. So the first being, add more generation and so we're working, especially in California, to streamline our generator interconnection processes, both for the large generators and for renewable generators, and have special financing provisions available.

We need to look at demand. And so part of this is how do we, when we have an inability to get all the power we're demanding, how do we keep mindful of the fact that demand is part of the solution, and maybe we find ways to reduce that, or other things. But the third part of this is the transportation issue. And that's really where I think we are here, is trying to define, "What about these transmission lines?"

And there's two pieces to it--there's total transfer capability, which pretty much means, "Here's your firm ability to transport across a wire." And then there's available transfer capability, which is sort of a non-firm way, and available transfer capability is really infinite as long as you have generation that's willing to move on one side of your problem or load that's willing to move on the other side of the problem.

So we've somehow tried to put really hard numbers around this notion of infinity. And that's hard for me to understand, but like why are we boxing this in, but even first Order 890 did not require a generator imbalance service be offered. So we're kind of stuck with this problem of trying to put hard numbers on a problem that's not always easy to do.

So where I think we are now is that we need the engineering studies to talk through how much firm capability is available? And how much additional capability do people want that really isn't available, either because we don't have the room or we don't have the availability of balancing generation or balancing demand?

So I think where we need to head, and there's two pieces to this, because California is in transition. Right now they're measuring growth congestion, just sort of loosely saying about \$5 million or 8% of the time to find a congestion problem. And as we move into more transparent markets in California, it's going to be much easier to look at those,

because the prices will reveal what the physics are already doing. And so there will be the ability to measure growth congestion that'll be available in the nodal prices.

And then there's going to be the need to measure net congestion, because gross congestion is not the whole story. Gross congestion is what the physics is saying, and then net congestion is taking away the hedges through the congestion revenue rates that kind of pay back some of these congestion risks. And then we need to look at what are the forward sales of the CRRs? And really, what that does is it's forward selling the total transfer capability. So it's forward selling what people want to transport.

And so those are things that need to be looked at in the future to figure out, at least for California, where is the congestion? And we're very encouraged that this will be very, very transparent, at least for California, and perhaps not so transparent in the regions around California. And we'll have to keep our thinking caps on and again be very mindful of the engineering studies, which is really the only other way to get the information.

Very quickly, I want to talk about improvements in the planning activities in the area. Because we do have, under Order 890, increasing planning activities, both sort of slicing deep and then slicing wide. So you have an improvement in the planning process in California itself, and so it's a four-step process now, where planning assumptions are developed in a public setting. Preliminary study results are presented in a public setting. And that iterative process results in a draft transmission plan, which is then ratified by the Board of Directors--Board of Governors in California.

So that's sort of the slice deep and then the slice wide is now working through the neighbors and the interconnections and the regions, and so we're sort of migrating to this WECC-wide look at how we do planning for the region as a whole, which is very, very encouraging.

And in addition to the transmission itself, the California ISO also looks at, "What are the locational capacity requirements?"--again, looking at demand/transport/generation--"Where could more generation be helpful to solve congestion?" Short-term planning makes sure that the gap between a long-term plan and sort of the operating needs gets closed.

Supporting renewables--and I'll just spend a moment, but California right now has a 20% renewables target. It's expected that that target will increase, and at the same time, there are efforts to phase out what we call once-through cooling and old thermal generation. So it's sort of more of these and less of those, and it's really a paradigm shift going on in a delicate balancing act to make sure it's overall adequate at the same time.

So, we have a very big transmission study effort going on through this renewable energy transmission initiative called RETI. I think it looks an awful lot like what Texas started, and California's trying their turn at it. And we're very, very hopeful that that is part of what ultimately gets populated into the WREZ process so that California is not doing anything in a vacuum. Because this can't be solved in a stand-alone way, and then just making it easier in general for larger generators to interconnect.

Just some quick statistics that I was handed as I flew onto the plane, or flew on the plane. In 2006 there was 1,155 megawatts of transmission capacity placed in service; in 2007 that number is 2,297; and in 2008, 1,094. So we are seeing--or I should say 1,094, because it might sound like 10. But we are seeing small projects moving forward, so we are seeing some increase in the infrastructure. But what we aren't seeing is the critically

needed new 500 kV, because it's pretty much the siting challenges, and we've got Sunrise with my company Palo Verde Devers II with Southern California Edison that have run into some really tough snags, and not sure how quickly that's going to be brought to fruition.

So we--there's a sense that having these environmental requirements compels a solution quicker, which is good on the one hand, but kind of worrisome on the other. The California ISO has already documented that the challenge in meeting the ramped-up, perhaps 33% renewable, we would need at least six new transmission lines, 500 kV transmission lines. And again, you know to contrast that with two that had been identified and are just really stuck in the siting process.

So we really think, especially with renewables, that the goal cannot be met without urgent action by the state and the federal government to help transform our transmission siting process.

David Meyer: Thank you. Let me turn to our last panelist, Dave Shelton from Western Area Power Administration.

Dave Shelton: Thank you.

David Meyer: Let me say that as we go forward here, it's going to be important for the panelists to introduce themselves as we get into the dialogue because the people on the webcast, otherwise, are going to be uncertain as to who is speaking. And so it's a little awkward for us to always be introducing ourselves to each other, but nonetheless, it is important for the people who are listening in. Sorry, Dave.

Dave Shelton: Good morning. My name is Dave Shelton, and I'm representing the Western Area Power Administration at today's workshop. Western is a federal power marketing administration within the Department of Energy and is headquartered in Lakewood, Colorado.

Western's service area covers 1.3 million square miles in 15 of the western states. Western markets and transmits approximately 10,000 megawatts of federal hydropower across an integrated 17,000 miles of high-voltage transmission line. Although the majority of Western's transmission system is utilized to deliver federal hydropower to customers, Western's transmission line also forms a portion of the 345 kV and 500 kV backbone system, transmission system in the West.

In addition, Western has been a key player in relieving transmission congestion in the West, most notably performing as the project manager for the past 15 upgrade projects in California. The Department's 2006 Congestion Study identified several areas experiencing transmission congestion in various parts of the nation. It will be appropriate and useful to document what has and has not occurred in these areas over the past three years, and to identify new congestion areas that have emerged.

With respect to Western's marketing area, although there have been some transmission additions near major load centers like Phoenix, little or no backbone transmission has been constructed in the past three years.

In the Western interconnection, sub-regional transmission planning groups such as Southwest Area Transmission Planning Group, or SWAT, and the Colorado Coordinated Planning Group, CCPG, as well as regional groups such as WestConnect, Columbia Grid and Northern Tier Transmission Planning Group, have been active in identification of

transmission congestion areas. In addition, the WECC Transmission Expansion Planning Policy Committee, better known as TEPPC, is addressing the issue of transmission congestion on a western interconnection basis.

Western proposes that the Department avail itself of this study work, as well as the study efforts of similar groups in the eastern interconnection, to avoid duplication of effort. In addition, Western believes that identification of congestion areas by itself is not sufficient and proposes that the 2009 Study should also focus on obstacles to eliminating congestion so that appropriate remedial actions can be considered.

For example, in a June 18, 2008, workshop just like this one that was held in Oklahoma City, a gentleman by the name of Dan Klempel of Basin Electric Power Cooperative made a statement about the proverbial elephant in the room--the issue of who should pay for remedial measures that would relieve congestion. Mr. Klempel stated that this question must be addressed because the analysis of congestion, however useful it may be, does not finance construction.

Another possible obstacle for the 2009 Study to consider is the issue of transmission siting. What changes to current siting processes could facilitate the construction of required new regionally sufficient transmission facilities? How can proper balance be achieved among the concerns of individual landowners and local communities, state regulatory agencies, and the interests of the broader region? Certainly, other obstacles could be identified as well. By giving more attention to identified obstacles to eliminating congestion and how they might be addressed, the 2009 Study can build on the 2006 effort to produce a report that policymakers will find valuable. Thank you.

David Meyer:

Thank you, David. Okay, let's--we will go into our discussion phase here. I want to focus a little bit on renewables and on import and export from--one--from producing areas to the consuming areas. And I want to build on the point that Laura made earlier that is that, if you were to--if California were to adopt that 33% requirement, what would the overall--I know you mentioned it would lead to the need for substantial amounts of new transmission. But can you give us more detail on how would it affect usage of some of the non-renewables capacity that would have to provide a balancing role? How would it affect dispatch? And just what are some of the other associated changes that you see with ramping up to that level?

Laura Manz:

Well, I'm going to say right now I'm not the expert at this yet, although I will be in three days, right? (Laughter). The study that is happening right now by the California ISO are indicating that a 20% is probably doable. And it's that next leap forward that starts to really look like a challenge.

And there are a couple of initiatives going on. I mean, I don't think any of us have a good idea yet on what the firming power requirements are. But that's sort of the next challenge. And normally, one would expect that it's your thermal, your old thermal, that would provide some of that.

But at the same time and kind of in the same sentence, California is also trying to get rid of the old thermal. So the answer is, "We're not quite sure yet, and we do think that, somehow having the demand side more engaged is going to be one of the answers." But it's not going to be the only answer. And so again, going back to needing more transmission, six lines identified once we move to that 33%. Because we are hoping that, it's not only the need for renewables, the increased target, but the exit of the things that we normally would use for firming, both kind of working in a--you know, in a way that California cannot solve this problem on a, through a status quo basis..

David Meyer: What is California trying to close down within the state, or phase out?

Laura Manz: A lot of these would be, I might call them oceanfront generation. You see in our area South Bay, very old, there's a couple--.

David Meyer: Is that coal, I'm sorry? Nuclear?

Laura Manz: No, no it's--let's see. No, they're--yeah, are they all gas or are some of them oil? No, all right. So it's--what's that? Okay. So gas with oil backup.

David Meyer: No phase-out of nuclear plants anticipated?

Laura Manz: No, no.

David Meyer: But it--I would expect retirements would be affected by this kind of shift. Inevitably there are ripple effects that affect decisions about retirement.

Laura Manz: Exactly. So what's happening is in the current construct, there are what are called reliability must-run contracts that have sort of a financial bridge mechanism, if you will. When a unit's been identified as shutting down, how many payments can we do in a contractual way to keep that available?

And that's not uncommon. I mean, that happens in other parts of the country, too. But there needs to be, I think, a more elegant exit strategy other than throwing money until we get a siting problem solved. That's kind of where we are.

David Meyer: Has there been any analysis of this one-third target of renewables of 30% as to how much is likely to come from outside of the state and is from generation within the state?

Laura Manz: I don't have those numbers. Larry, do you have anything on that? I think the--you know, we don't have our RETI done yet, so--.

Larry Chaset: I'm Larry Chaset with the California Public Utilities Commission. Hi, Dave, Laura.

And we've identified--the Energy Commission has identified that in the southwest desert portion of the state, there's more than 50,000 megawatts of solar capacity. So it's possible that we could meet our entire state load from concentrated solar power, solar DG, within the state. Not that we will necessarily do that; there are other constraints. There are land use constraints.

But there's no requirement that the 33% be met by in-state power, but it's physically possible that the entire 33% could be met in state. That's still going to require transmission, because the load pockets a couple hundred miles away from where the generation is.

And I just want to make one other comment on the retirements of the coastal plants. It's not that the plants need to be retired; some of them are old and may need re-powering, but the problem is the ones through cooling, a lot of these just--they're heating the ocean, having adverse impacts on marine resources. And we're going to have to make an investment in replacing the cooling systems on some of these plants because the CAISO folks who have been working on trying to balance the intermittent wind with existing dispatchable resources have identified these old single-cycle plants on the coast as being

very good resources, because they can move up and down much more effectively than some of the new combined-cycle plants.

So, what we're going to need to do in California is to invest in rebuilding the cooling systems so that they have cooling towers rather than use once-through cooling, things like that. But that's something that the state is looking at very closely.

David Meyer: Wanted to ask Laura another question about the market redesign that is in process here. And I appreciate the increased transparency and the importance of that transparency, but I wanted to ask you in particular, will we see greater transparency regarding what's happening on some of the lines that go, that link California to outside sources? That-- those paths are extremely important in terms of analyzing congestion in terms of the overall system that supplies electricity for California.

Laura Manz: Right. Well, hopefully, we'll see it in a couple of ways because, first of all, there will be pricing points at the border. So we'll have information about the cost of power at the border. And then there will also be requests for transmission service. And so to look at those requests for transmission service, especially as we look at imports--I'm assuming we're not going to see too many exports in California--you would also have data for that as well.

David Meyer: Yeah, and so far as timing is concerned, I know this is a moving target, but at least in terms of today's perspective, when do you expect that transition might take place?

Laura Manz: Let's see, is this your bet, Charlie? (Laughter). I'm going to say first half of 2009. I'd like to say early 2009, but the movement toward the--I think it's pretty common knowledge at this point that we're not going to meet the November target. We're looking for a February target because there's just not a general ease with implementing this over the winter peak season. So I think we'll see it, you know, hopefully, spring.

David Meyer: Well, I appreciate the difficulties associated with that kind of transition.

Laura Manz: I don't work for them yet. (Laughter).

David Meyer: Yeah, okay. I want to turn to, next to, back to David Shelton and to the rest of the panel in general on this question of obstacles, the argument, the line of argument that identification of congestion is fine, it's helpful, it's an important step in the process, but it doesn't avail you much if you aren't able to then move forward to do the things that you still need to do, whether it's build some generation or launch increased demand management programs or build new transmission.

So let's talk about obstacles here. And it's the most--I guess if you see a way to look at obstacles in the period from, say, 2005 through 2008, that would be highly relevant.

David Shelton: A good friend of mine has a little saying about "show me the money." And, you know, it does take money to build transmission lines. And supposedly there is a lot of money out there to build transmission lines, and I've heard that from several developers.

But I think even though you have the money, that probably one of the most critical obstacles has to be transmission siting. And I think all we have to do is look at Palo Verde Devers as a prime example of a line that lies in a corridor that was identified in the 2006 study. And yet this is a transmission line that is having great difficulty getting built.

So is it the fact that it crosses, that it's in two states? Or is it just a fact that it crosses Arizona and there's no benefit, at least at this point, for Arizona utilities? So I think there may need to be some, I'll say, infrastructure, some policy infrastructure changes that need to be made or need to be facilitated. And maybe we need to go back to the Federal Highway System and how the Federal Highway System came about, and need to look at transmission from that perspective.

But I think there needs to be some broader looking. I think the Western Governors have attempted to attack this and are doing a very good job, but there's more effort necessary.

David Meyer: Any of the other panelists want to report some obstacles?

Lisa Szot: Yes, I would like to add, I also agree that the siting has been an issue, at least in New Mexico. And one other thing is the cost allocation of how we're going to share these costs among parties. You are correct, there are developers and venture capitalists that are willing to put the money in, but then there becomes a risk issue of where it's going to come from. And if the projects are true to be and it's sort of the chicken and an egg, so we get into that aspect.

So coming from a state where the PRC is very adamant that none of the transmission will be put into the rate base, it causes some issues as to how you move forward to get transmission built.

Unidentified Participant: I'm sorry, you said that New Mexico's policy is that people should build it, but it shouldn't be charged to the people of New Mexico?

Lisa Szot: They don't--the PRC prefers that the rate--the transmission that gets built for any of these renewables at this point in time, does not get included in the rate base unless, obviously, it gets done through the typical old process of the network upgrades, and they go through that process.

But any large lines like that I go and build under RETA, I cannot go and work with the utilities and put it into their rate base.

Unidentified Participant: Who's left to pay for it?

Lisa Szot: Well that's where the problem lies among the (laughter) agencies. We're looking at the anchor shipper model where you--or you can do an open season, sort of like the Wyoming-Colorado Intertie. There's other options out there. But those are sort of the types of methodologies to incur the costs for the project.

Rebecca Wagner: All right. This is Rebecca Wagner. I'd like to follow up on that, because we're trying to examine the same thing. And I feel like I'm always the broken record on our, what we call RETAC. You know, we didn't want to do the exact acronyms that you all have, but ultimately, some rate payer pays for it. And so, you're essentially saying that if it's going to be an interstate transmission line to benefit, to move renewables and other generation out of your state, it's the burden going to the rate payers who are the beneficiaries. Is that--?

Lisa Szot: Well, that's not my perspective, but that's--our Utilities Commission prefers to go down that path, that it not be burdensome to the New Mexico rate payers if the benefits to go Arizona or wherever.

Rebecca Wagner: Okay, so the beneficiary pays.

Lisa Szot: Yeah, kind of.

Unidentified Participant: So if everyone's shipping it to California, the California PUC has to approve the fact that the California rate payers would pay for the transmission to New Mexico and Nevada and Arizona.

Lisa Szot: That sounds reasonable to me (laughter). I'm not sure my colleagues in the California PUC would agree with that.

Unidentified Participant: But that is the issue on the table?

Lisa Szot: It is, absolutely.

Unidentified Participant: And is that being addressed by the Western Governors' Association at the WECC meetings?

Lisa Szot: No, no.

Unidentified Participant: Well, then, if Mr. Shelton was right that "where's the money" is one of the questions to be answered, I think we've identified an issue that has so far developed different answers, but none of which seem to be acceptable to all the parties.

David Shelton: Could you put that statement in writing, "Mr. Shelton was correct," so I can take that back to my boss (laughter)? That will be a first!

Unidentified Participant: I won't put it in writing but I'll call Chip myself.

David Shelton: Okay, thank you.

Unidentified Participant: There have been a couple; can I just take a second to share? We've had reference to a number of issues, starting off with the very gracious way that Rebecca Wagner avoided a question of why the federal government's involved with this at all, in terms of what we're doing here today.

And the real issue is, until 2005, these issues were state issues. Your generation was local, your transmission was local, your consumers were local, and everything was fine. After the blackout in '03, following other blackouts, Congress started getting involved with the problems in the West and elsewhere, and said maybe there's a reason for some federal involvement. And they charged the Department of Energy with four major projects. This is one of them.

One of the projects was what Lisa Szot was relating to, which is the 368 Corridor provisions, which is a charge of a federal government land use agency, sort of land ownership agencies, to take a look at where they have right-of-ways for everybody--for not only electric transmission, but gas pipelines and others--and to update that and add on new corridors. That project's well underway, and you've addressed some of the concerns and the reason that is we try to do that across the whole country, starting with the 11 western states.

The second provision that the Department is charged with is one we're here with today, which is not a siting issue. We keep saying that time and again. The Department of Energy was not charged with siting. It was charged with identifying the congestion and constraint problems that might facilitate the eventual availability of a federal remedy to

be decided eventually, if there was a designation of a corridor by the Federal Energy Regulatory Commission, at which time all of the questions that everyone's raising here would really be presented to and decided by the Federal Energy Regulatory Commission--if it ever got that far. The preference of everyone is to leave us out of it. If New Mexico and Arizona and California and Nevada can sit down and solve all these problems on your own, why would we want to bother to figure out the best solutions?

But there was a decision made in the Congress of the United States in 2005 that if it can't be worked out, and it is a significant regional problem that will have adverse impacts, that there is the possibility for a federal role. That's what we're here with today, to figure out how we measure whether the problem exists, and if so, what kind of a remedy to eventually propose after the Study's completed, if there is a need for a remedy at all.

The other issue that the federal government was charged with was one that you've also alluded to today, which is how do we coordinate all the federal permitting issues that are presented whenever you want to build a transmission line through federal lands, whether it's in Nevada, Arizona, California, New Mexico, or wherever? And that is another responsibility that was given to the Department of Energy.

And I believe later this week we will be releasing regulations implementing that proposal, laying out in some detail, have people interested in gaining a role with the Department of Energy to coordinate the permitting process where you have multiple permits from multiple federal agencies.

And the fourth one is one that my friends at the Western Area Power Administration and the Southwest Power Administration will eventually be dealing with. And that was authority given to them to engage in the construction of transmission lines, if they could find anyone willing to provide what's called third-party financing for the construction of those lines.

That is a version of the Path 15 process, which was so successful in eliminating congestion bottlenecks in California. That is one area where, in order to go forward, you're going to have to answer the question that prompted my little speech, which is, "Who's going to pay for it?" And no one's going to provide third-party financing to the Western Area Power Administration to construct a line that satisfies the statutory criteria for its action unless they know who they're going to be able to recoup their expenses from. And we're going to be working on that, so there is an interplay.

The only good thing I can see for everybody is that we have currently at least three billionaires interested in building transmission lines. Mr. Pickens has had a number of speeches and statements on how he thinks it ought to be handled. Lately, Mr. Anschutz through his companies have talked about building some transmission lines from Colorado down to your neck of the woods in Arizona. And, Warren Buffett, through the MidAmerican Company, is looking to build some lines going into the Bonneville footprint in the Pacific Northwest.

So transmission is there, the private sector's doing things. The whole idea of what David Meyer here has been doing over the last four years, with his very able staff, is to find out what we should be doing under our authority to do this Congestion Study, to do it right, so as to then be able to make an evaluation of whether it would be appropriate to designate a corridor which would present an opportunity for a federal backstop when, and, and if the various regions affected in the--identified in the Study are unable to resolve the matter itself.

Sorry for the speech.

David Meyer: Yeah, I have a question I want to raise, but let me see if the panelists want to respond to some of the (talk over).

Rebecca Wagner: I'm sorry. I'm going to have to respond to that. Rebecca Wagner, Nevada Commission. I don't want any of my comments to be construed as any criticism of DOE and the process that you're engaging on the Congestion Studies. Our issue in Nevada was losing our State's authority on--the whole issue of the backstopping authority. That was our greatest concern. I wish I could say that the western states work and play well together and we could sort this out ourselves, but there's no guarantee that that's going to happen. And I think someone earlier, maybe Laura, said there's a paradigm shift of what we're looking at. We're not looking at "business as usual," building fossil fuel power plants. We're looking at renewables and demand-side management and, you know, what we can do as a region. Which, even in our own state, we have a tendency to put up our borders. Our portfolio standard can only be met in-state, which I adamantly disagree with. I mean, we need to open up and all work together.

So I just wanted to clarify that, it's, I'm not picking on DOE. We have--Nevadans take on DOE for a number of other issues, and this isn't one that I am picking on you, Art. Our primary concern was the backstopping authority. And I would like to take the--our colleagues in, all my colleagues the West, we can sort this out and work something out together. But I'm glad that we have you there in the event that we can't.

Unidentified Participant: Thank you.

David Meyer: Great. Now, others on-- that want to speak to this? Okay--my view of--you know, with all respect to the Congress and the way they wrote Section 1221A of the Energy Policy Act, the focus is on congestion. But lately I've begun to think that, if your focus is on congestion only, or primarily, and if you, if you find yourself in a situation where you've got a severe congestion problem and you say to yourself, "Well, what can I do quickly? I can build some generation close to load. I can launch some energy efficiency programs close to load. If I do a transmission solution, that could take a long time."

And so the point is that you can think of certain situations where you would never pick transmission; you would always pick something else before you got to the point of saying that transmission was the thing you wanted to do.

But I think the mistake here is looking at--not looking at these different kinds of options, looking at them in the round. Looking at all other--and there are situations where, because of what transmission can do for you that some of these other options can't, you would want to build transmission.

So I want to ask the panelists to, if you can develop that? And I will ask the same questions of the next panel as well. Because I think, I think we do need to start thinking in these terms so that we can make--collectively, we can make better decisions when we pick certain options to meet certain kinds of needs.

Laura Manz: Right, Laura Manz, San Diego Gas and Electric, soon to be California ISO. I would--I have two thoughts on that. First of all, we need transparency that we don't have. So if we were--and I use a bread example. You could decide whether it was more cost effective to bake your bread locally or more cost effective to bake it remotely and transport it in. But it requires knowing all the cost components to your product and your transportation. And we don't have that very clearly.

The other part of this is that our old way of solving this problem was based on fuels that could be shipped. You could pipeline in the oil, the gas, whatever you want to do. We now have location-constrained resources if we have a future that's, you know, kind of more green than what we have. And the wind is not blowing everywhere, and the sun shines not quite everywhere. And so I think that part of the struggle we're having right now is having to re-think an old problem by using these location-constrained resources. That's a whole different problem we're solving now.

Lisa Szot:

Lisa Szot, New Mexico Renewable Energy Transmission Authority. Obviously, being a transmission authority, my goal is to look at building transmission primarily. But in the state of New Mexico, because our load is so low and so small and our resources are so abundant--I mean we have gigawatts of wind and solar--by 2030, even with the load growth, we'll still have gigawatts of extra resources that we can provide to other states. So to us it becomes, obviously, with the paradigm shift that we've all talked about of how the utilities were initially built was to serve their own load, now we're looking at moving massive amounts of resource out.

So there isn't any other way but to build transmission to do what I'm talking about, because all of the existing infrastructure was built just to serve that local load with that local resource, for the most part, with few exceptions of some of the shared larger plants. So, in the--at least in New Mexico, with our resource being so large, and we compare with Wyoming having an abundance and a low load, you have to build transmission to move it out of the state.

(Laughter).

Unidentified Participant: If you go back to the 50s, 60s, 70s and take a look at the development of generation and transmission in the western United States, you'll find that, at least in the West, you have remote located power plants. They were built close to a water source or sitting on top of a coal field or something like that. And there's major transmission lines running to the load centers, 2, 3, 4, 500 miles away.

It wasn't until we got into the late 90s and the early 2000s that you started seeing a proliferation of gas-fired units being built close to major load centers. Now, unfortunately, they were all trying to get to the same place--California--but they were built close to Las Vegas or close to Phoenix. And so what you have now is a proliferation of these units, some sitting idle--expensive road art.

The--you know, unfortunately, I think we need to go back and take a look at where we've been. Nobody wants a power plant sitting in their back yard. We have the NIMBY issue; of course, nobody wants a transmission line sitting in their back yard. But unfortunately, if you start looking at the wind sites, the solar sites, renewable sites, what you find is they don't happen to be sitting next to Phoenix, Arizona, or Las Vegas, Nevada, or San Diego or Los Angeles or San Francisco; they happen to be remotely located.

So what you're going to have to do, you're going to have to build an interstate highway system to get the resources to the loads. Again, if we go back to Laura's example about the bread, you know you can create a bakery close to Phoenix or San Diego or Los Angeles, and unfortunately, that's going to be your major market without some type of very extensive transmission system or transportation system. If you want to deal regionally, you're going to have to have the infrastructure necessary to deal regionally,

and that's going to take a 500 kV or 345 kV or transmission system with multiple lines to do that.

So, you know, the short answer to solving our resource issue may be build close. That's not going to solve our renewable issue or our renewable mandates. So--.

David Meyer: Yeah, let me--Alison has raised her hand here and has a comment she wants to offer.

Alison Silverstein: This is Alison Silverstein, Consultant to the Department of Energy. Since the Department's mandate from Congress is not necessarily to solve the congestion problem, but merely to identify it, I was wondering first off, whether you all have some very specific observations or suggestions with respect to the state of congestion in your respective areas between the start of 2006 and today, 2008? Since the Department regrettably has no statute that says, "Fix it," or, "You're entitled to tell the world how to charge for new transmission," or, "We're going to create a national transmission highway system," their only charge is identify transmission and that's what this Study is for.

So I--congestion, thank you. So any very specific observations or recommendations on that point?

Lisa Szot: Lisa Szot, New Mexico Renewable Energy Transmission Authority. And working with developers in the utilities in New Mexico, we know that we can get a lot of the resources from central New Mexico to Four Corners, but we can't get out of Four Corners because it's totally constrained there.

So that's a huge limitation on any of the renewable resources that are in the central northeastern part of New Mexico. When you start hitting the southwestern part of New Mexico for the solar, there's also a constraint there moving west to Arizona. There's a little capacity there now but will be filled up once this next resource gets built down there, and then we're at a limitation of exporting any power there. So that's another constraint.

David Meyer: Thank you.

Alison Silverstein: Are there specific data sources or documents that we can go to that, other than the work that TEPPC's already doing that the Department is cooperating with?

Lisa Szot: Yes there is, there's documents out on the OASIS site for PNN that go through all of their ATC and the available capacity and where the constraints are in that area. It's like an 88-page document. And it basically says like there's 1,300 megawatts right now to get to Four Corners, zero getting out. That's all I have.

Alison Silverstein: Thank you. As we roll down the table, the more that you guys can cite specific documents and sources that would not already have been revealed through our work with TEPPC, that would be wonderful. Thank you.

Dave Shelton: Well there are other--excuse me, Dave Shelton, Western Area Power Administration. There are other sources out there--the SWAT Group, Southwest Area Transmission, CCPG, Colorado Coordinated Planning Group, have done studies. Especially SWAT. There are, I think, 10--is that correct, Jerry?--10 different subgroups within the SWAT Group that look at, for instance, congestion along the Colorado River, congestion in southern Arizona, congestion in central Arizona, congestion between New Mexico and Arizona that Lisa referred to.

So while the DOE Study was very, very good--it identified congestion between I'll call it major regions, the Arizona region and the California region--there's probably more subgroup, in fact there is more subgroup congestion out there. And especially the SWAT Groups have identified all of those congested areas.

David Meyer: This is exactly the sort of data reference or reference to existing studies or studies that are in process that--it's getting all of those leads identified in the record. Once they're in the record, then we can chase after them, we can go after those things. But it--this sort of thing is extremely helpful.

Dave Shelton: Also, several years ago, Governor Richardson of New Mexico put together a task force that looked at moving as much as 30,000 megawatts of wind generation from eastern New Mexico to Arizona and California. And there were some congestion routes or areas identified, I believe, in that study also.

David Meyer: Go ahead, Alison.

Alison Silverstein: Two more questions, if I may, to follow up on that comment. And these are for all of you to answer, if you would. The first is you mentioned subarea or subregional congestion. The Department's requirement is to look for congestion that is in the national interest. And you will recall that the last Study identified sort of major national interest areas, areas of concern, and conditional congestion areas.

So my first question for you all is, do the--any recommendations or thoughts on how the Department should parse between something that is sort of subregional or semi-local--how do we identify what is of the national interest or what deserves to be addressed in a major national study?

And the second goes to the question of conditional congestion that the Department talked about. For instance, because the last Study identified areas of major potential renewable development and talked about the chicken-and-egg problem for transmissions relative to renewable development, or nuclear development or other types. How do you think that the notion of conditional congestion areas remains a valid one? Any thoughts on whether there should be a different way to approach that? Thank you.

Dave Shelton: Dave Shelton, Western Area Power. If I could address the first part of your question. When Laura started out early, she talked about the definition of congestion. And people's--there are lots of definitions of congestion, and there are probably lots of definitions of "in the national interest."

For instance, in the West is a national interest congestion area between Arizona and California. And the people who are in New Mexico will tell you, "That's not of interest to me." Okay? Or the people in Nevada would tell you that. However, Governor Richardson would probably tell you that it's of vital interest to him that the area between Arizona and New Mexico--he would argue that that's in the national interest because he can't get to California to help solve California's problem.

So I think that, while there is a particular definition that we've established at this point, of what is in the national interest, that we need to perhaps take that a little further and say, "What does the most good?" And, you know, perhaps opening up a corridor between Arizona and New Mexico to get wind power into Arizona, which could possibly then go to help Governor Schwarzenegger and Californians, that might be of national interest.

So I think it goes back to a definition standpoint. And look at it from a broader perspective, you know. What DOE has done is fantastic, and you're right that they have very limited scope in what they've been directed to do. But perhaps we just need to think a little bit more out of the box and expand our definition of "national interest."

Lisa Szot: Lisa Szot, New Mexico Renewable Energy Transmission Authority. To address the conditional, obviously, the way the nation's going with the RPSs and the carbon tax and all these requirements, renewables are becoming a method to provide resource in the whole fuel mix box. So I think we need to address the fact that it isn't--it is of interest to try to get the renewables to load at the most economic and reliable way we can.

And if there's a way that DOE can assist in finding and addressing those areas where there are congestion, and we know where those areas are, to help assist in alleviating those, then that would be of benefit to us. And I think it needs to be raised, and I know there was a priority to these methods, and conditional was at the bottom. And I'm wondering whether it really needs to stay down there or if we might want to raise the lever on that?

David Meyer: Okay. Others have comments on this point?

We're getting--we need to remind everybody that we're getting close to the close of the time for this panel. So think whether there are any final points you want to make, because this is your opportunity.

Warren Belmar: I have one last question if I might; this is Warren Belmar with the Department of Energy. The statute charges us to consult with the states. It'll be interesting to hear, at least from the two state representatives of New Mexico and Nevada, how you coordinate the state response, or how do you determine who we coordinate? And are you all speaking in one voice for Nevada and for New Mexico? And, the one thing that we did find in the last Study was some states said, "Well you didn't consult with us," which meant, "You didn't consult with me, but you might have spoken with someone else in the state."

How can we make sure that the opportunity for consultation is made aware to everyone who thinks they are "the state"? And that they have then--at least it affords the opportunity to participate. So in Nevada and in New Mexico, how many different parties are there that constitute consultation with the State of New Mexico or the State of Nevada?

Lisa Szot: Lisa Szot, New Mexico Renewable Energy Transmission Authority. At this point in time, even though I consist of a board, I also relate directly to the Governor's office. So I'm in direct correspondence with him and work directly with the Energy, Minerals, and Natural Resources Department, which we started working in consortium together to make all these comments.

So we might file them separately, but we're primarily the two entities which you guys have been in touch with. And we appreciate that.

Warren Belmar: Okay. Rebecca?

Rebecca Wagner: For Nevada--Rebecca Wagner, Nevada Public Utilities Commission--it's kind of a tough question for me. I was formerly with the Governor's office, so I always coordinated with the PUC. And I don't know if our State Energy Office and the Governor's office is keeping an eye on this. Certainly I'll remind them, but for Nevada it would be both of us.

I try and stay up on these issues because it was important in my previous position. So with us, it would be with the Commission and the Governor's office.

Warren Belmar: I only raise it because of--I'll share an anecdote with you. But after we issued the first preliminary determination on designations and after we were in the finalization phase and then afforded everyone the opportunity to pursue reconsideration of the first two designations, we received an application from the Attorney General of the State of New York to intervene in the proceeding as a party, claiming that it already was there, but it hadn't filed anything, it was just their PUC and other people who had participated, but they wanted to handle the litigation so they had to have their official involvement.

And that just highlighted the problem to me of--"Well, gee, we thought we were dealing with the state." And now someone else is coming up and saying, "Well, you know, I'm the one you should've been talking to," only or exclusively or primarily. And it would sure help if everyone goes back and just makes sure that anyone who has anything to share with us, sources of data, convey them and we'll be happy to meet with everybody.

David Meyer: Okay. Now let me ask the panel one more time. Are there areas of--any new areas, congestion areas that, congestion problems that have sort of emerged or are on, come on the screen since we did the 2006 Study? Okay, all right.

Well thank you all. It's been an interesting discussion, and we have a lot of leads to follow up on here, and we will be happy to do that. So we're going to take a break now, and the next panel will begin at exactly 11--sorry, 10:45. So we'll see you back here in a few minutes.

(Break)

David Meyer: We'll resume now with Panel Two. This second panel, as I mentioned earlier, now we have a group of experts primarily from utilities, and they can help us fill in some of the conceptual categories and boxes and so on that we were discussing in the first panel.

But at the same time, I want to tell all of the panelists that they have the luxury of having heard the first panel, and so if there are issues that were radial topics, things that were discussed in the first panel that you want to express views about, please do so. We're happy to have those views on the record here.

So let me start first with Jerry Smith from WestConnect, but just let me ask the panelists in general to identify yourselves and your companies in whatever ways you think most appropriate.

Jerry Smith: Good morning, Mr. Meyers, panelists and members of the audience. My name is Jerry Smith. I'm here representing the planning function for WestConnect. We are responsible for overseeing subregional planning activities in seven western states. This planning function was initiated in May of 2007, and we are heavily engaged in planning of transmission facilities in the West, not only within the planning area footprint for WestConnect, but engaging with other subregion areas and coordinating those efforts.

My remarks this morning sort of fall under four headings. First, I want to offer some remarks regarding the definition and measurement of congestion. Secondly, I would spend a few moments talking about the data that should be considered in the 2009 Congestion Study. Thirdly, I will offer some comments regarding changes that have occurred since 2005 and the previous Congestion Study. And then I will focus on some comments about the Congestion Study that is about to unfold.

So let me begin by addressing the definition of measurement of congestion. I think the earlier panel that there was some discussion about the fact that congestion takes on different meanings to different people. And certainly, electric energy congestion is a condition where either physical or contractual limitations can restrict the opportunity for additional transactions between two locations.

And at the core of the public policy consideration is whether limitations in economic market opportunities, how those should be weighed relative to the reliable performance of the grid. And I believe that in EPAct 2005, the Federal Reliability Mandate sort of connotes a shift from the purely market considerations that were considered as part of congestion in the prior DOE Study effort. The West has consistently asked for adoption of a definition of congestion that provides a balanced consideration of economic transmission expansion and reliability-driven system improvements.

Similarly, the West has asked for a set of metrics that can be established and adopted to consistently measure the degree of congestion that could occur over time in the transmission system. In the absence of a standard that defines that congestion, and in the absence of set measures of metrics, the West is continuing to refine and use the metrics that it used for the last DOE congestion. The factors that were developed looked at the percent of time that facilities were at over 90% of their capacity, or over the percent of time the facilities were operating about 75% of the capacity.

And now let me spend some time talking about the data that should be considered as we move forward.

Certainly, as you perform security-constrained economic dispatch studies or gather historical data, you will come to some findings relative to what congestion does, can or might exist in the transmission path. But that in itself is not sufficient in order to make a determination of the proper course of action to be taken to remedy that congestion.

In fact, transmission limitations occur in three forms. You can have restrictions that are on the sending end of the transmission path, you can have the transmission path itself as a limitation, or you can have the limitation for the path established by the receiving end of that transmission path. And, in fact, for the National Interest Electric Transmission Corridor designated in the West, the limitation has been on the receiving end of that corridor--namely, southern California.

Now I would suggest that the best way to get some real sense of these limitations is to review the tech studies that are performed throughout the Western Electricity Coordinating Council process for rating of facilities to establish some understanding of what the true limitations for these ratings are. Because it's those ratings that get folded into the economic-constrained dispatch--excuse me, security-constrained economic dispatch studies, and that really determines to what degree congestion may be occurring over particular paths in the West.

I would also suggest that reports and materials that are provided by private or individual entities should not be considered as authoritative bodies of work unless they are having the public scrutiny that the studies that I've just referred to are receiving in terms of peer review within the industry and among the stakeholders.

In terms of changes that have occurred since the last Congestion Study has occurred, I can report to you that path ratings in the West have increased since 2005, and that there are planned transmission improvements and additions that are planned and are occurring

that will continue to increase path ratings in the future. I would refer you to two resources to gain some appreciation of how those ratings are changing.

I would first refer you to the WestConnect 10-Year Transmission Plan that was published in January of 2007 and the total transfer capability and available transmission capacity workshop materials posted on the WestConnect website in May of this year as evidence of this claim that transmission path limits are increasing.

I would also refer you to the Arizona Corporation Commission's bi-annual transmission assessment reports as another source validating that continuing transmission improvements are occurring on the sending end of the west NIETC corridor. The prevailing evidence on the receiving end of that corridor, unfortunately, is not quite as encouraging. Transmission improvements on the receiving end of the NIETC corridor continue to falter and lag the ever-growing need in southern California.

The CALISO--it's a large generator interconnection, too--continues to be clogged with large numbers of potential renewable development projects that all seek access to unlimited transmission classes. The recent FERC decision to waive some CALISO rules and timelines for interconnection requests may be too little, too late.

And in fact the public policy movement encouraging renewable development is now spreading to a larger forum in the West via the Western Governors' Association's Westwide Renewable Energy Zone Study. But the study of transmission lines needed to accommodate the development of potential renewable resources that will be identified in that study will not be undertaken for another year.

Meanwhile, interstate transmission projects like the Frontier Project and the TransWest Express Project have faltered due to lack of willing investors to enable energy to be delivered to California's front door. The most recent concern I have observed coming out of California is a recent court decision upholding a claim that new gas-powered generation projects that were proposed to replace retiring units in California should be delayed until the environmental impacts of greenhouse gas emissions are properly studied.

I think all of these indications are that local generation is not occurring, and we have lack of transmission being developed, and there's only so much you can do with demand-side resources.

What I would suggest the focus for the 2009 Study should consider is that in January, WestConnect requested of the Transmission Expansion Policy Committee of WECC that they incorporate in its annual study plan all studies that would be deemed necessary to update the 2006 DOE Congestion Study. TEPPC has developed that study plan scenario that would accomplish that purpose.

Likewise, TEPPC is assembling a historical record of actual flows versus scheduled flows over WECC-rated transmission paths. This effort is well aligned with DOE's stated objectives of focusing on recent and current congestion in their 2009 Study.

However, limiting the 2009 Congestion Study to recent and current congestion seems contrary to the purpose for designating a NIETC corridor in the West. Given the changes that have occurred since the previous study, it would seem appropriate to consider whether industry has taken sufficient steps to resolve or mitigate prior DOE concerns regarding congestion.

Congestion that adversely impacts consumers is not and should not be measured solely by some party's inability to access transmission services or establish interconnection solely for economic gain. Rather, when persistent congestion actually exists, it is often accompanied by reliability concerns such as interruption of service to consumers, generation curtailments and rolling blackouts.

Therefore, it's important that when solutions are sought for resolving congestion, that they not create or perpetuate deterioration of reliability of service to consumers. It is my belief that this can only be ascertained through forward-looking studies that consider the effects of congestion and proposed mitigation measures.

That concludes my opening remarks.

David Meyer: Well, thank you for some thoughtful comments there. I think you've got some salient points for us to work from.

Let me ask next Brian Whalen from Nevada Power and Sierra Pacific Power.

Brian Whalen: Well, since we're the host utility, I'll do a little bit of PR to begin with. Sierra Pacific Resources is a parent of Nevada Power and Sierra Pacific Power Company. We serve about 8,000 megawatts of load within the state of Nevada, a 50,000-square-mile control area. And we--Nevada is the national leader in per capita solar and geothermal usage.

What we've been up to lately--I hear a lot of people saying there will be instability of transmission. Apparently I haven't been advertising well enough. We have been constructing major transmission projects about every two years for the last 12 years, totaling over \$1 billion, and we have approval for over \$1 billion more in the next 10 years.

We--the biggest piece of that is the Intertie Project, which as Rebecca Wagner mentioned, is a 500 kV line 250 miles long linking south and northern Nevada. In addition to that, we are in the WECC hole in the doughnut, mostly Sierra. If you look at a WECC map, the big empty spot out in the middle is northern Nevada. As such, we are extremely familiar with congestion. Every line that we have is congested.

Through the 368 process, which fortunately is much less contentious than the 1221 process, they identified 2,000 miles of new transmission corridors within the state of Nevada out of the 6,000 total. So for the entire West Coast, we have a third and we are--we provided extensive comments to that process, specifically for that.

Let's see. What else. We have just completed a 500-megawatt combined cycle in Reno, Nevada, and we've got a Commission hearing for two more--one to be acquired, one to be constructed--that will start next month.

As far as issues that DOE should be aware of, I think one of the problems that's out there, and I think Laura alluded to this earlier, is when you're measuring congestion, it'd be helpful to have availability of information and transparency. Right now, an integrated OASIS for the western interconnection does not exist. In order to find out what, as an example, Path 49 congestion is, you have to go through and catalogue the available transmission capacity for each of the individual owners, of which I don't even want to try to get into the list, but it's at least--it's more than 10 different entities, some of which have common OASIS nodes, some of which have their own. And then some of which don't post specific rights.

So to find out what the total capacity is and who holds that individual capacity is a very difficult endeavor, even for someone that is a power marketer. So I think that that's not necessarily directly related to this, but I think it would be something that would be helpful for the grid as a whole.

Looking over the congestion analysis that was done in 2006, I had a couple of comments and a couple of examples. The first is we have our summit tiling, which ties CR Pacific to PG&E. It has an ATC of, I think, three megawatts right now, a TTC of 160. We are constantly getting requests asking what the capability to get from Sierra Pacific into PG&E is, but that's never reflected in any documentation or utilization curves, because, the ATC is so far away from what the WTC path rating number is. So I think that there is, in several cases and that just being one example, there's a difficulty measuring people's wishes to use a facility when they already know that it's not there.

And so that's something DOE should try to consider. It's very hard to under--I mean, well, to quantify. But I think the way to do that is to look at a slightly lower level than was mentioned by Jerry at the actual OASIS request firm transmission that are in each of the utilities' queues. And I know for California--you don't want to look at the interconnection queues of Nevada Power or Sierra Pacific or the CALISO, because the 50,000 megawatts that they have would distort what you're looking at. But the other thing that I've noticed, and I think this was brought up in San Francisco, is that I think you should focus more on what I'll call interties than radial feeds.

And when I'm discussing radial feeds, I'm talking more of the Colstrip, Bridgers, and Navajos. If you look at the 2006 Study, one of the most congested or most utilized lines was the Navajo Crystal-McCullough line, of which Nevada Power is the owner. And it really isn't congested. It looks like it is, but it was sized to move the output of the Navajo Coal Plant. And so I think there's a distortion there, and I think you should be aware of that.

The last thing that I'll bring up is sort of my own term, which as many acronyms and things that have gone around I'm almost scared to mention. But it's more of a financial congestion where there are paths that have ATC and have availability, but there are--and I hate this term--but pancakes that are just created by single transformers or bus work. And I think the classic examples are PacifiCorp going across Idaho Power or anyone leaving the Sierra system trying to reach Bonneville.

There are full rate charges going across distances that are not more than, say, 250 feet and as such, those prohibit the--well, not prohibit, but limit--the utility of the facilities because of a full rate charge for a single piece of equipment.

David Meyer: Thank you. That was very helpful. Let me turn next to Jim Filippi, and I'll let you describe your company.

Jim Filippi: Thank you, David. I'm Jim Filippi of NextLight Renewable Power. We're a relatively new company, just started up this year. We are developers of renewable resources, primarily focusing initially on solar resources. Before that, I had a long career at Pacific Gas & Electric. Today I also am continuing as co-chair of the WECC's Technical Advisory Subcommittee to the Transmission Expansion Planning Policy Committee, known as TEPPC, and I share that leadership of that group along with Wally Gibson.

When I refer today the--well, the Technical Advisory Subcommittee is responsible for working with WECC staff to perform studies of transmission expansion planning. We

are conducting those studies now in our annual planning cycle, and my comments today will primarily address the status of those studies.

So we are--those studies that are now in progress will provide a better picture of the historical transmission congestion that has occurred in the West. And in addition, the studies will also provide some insight into what congestion may emerge in the future. With some financial support from the Department of Energy, WECC is for the first time obtaining some historical hourly schedule and ATC data that had not previously been available.

We now have some of this data from Bonneville Power Administration covering the Northwest System. And by the end of September we should have data for the rest of the West from OATI. The data source will be electronic tags for schedule data and the OASIS for ATC data. OATI is aggregating the source data for the individual points of receipt and points of delivery and translating that data into WECC-rated path level.

So based on some preliminary work, we expect that this is going to add considerably to the understanding and identification of historical congestion. Also, having this schedule and ATC data will enable us to introduce some new indices not previously used, such as the percentage of time schedules, both firm and non-firm and in both directions on a path, will exceed 75% or 90% of OCC.

In the course of the studies, we will be trying to clarify our own understanding of which metrics provide the best insights for understanding the need for both better business practices and increased investment in transmission, since lack of either one can lead to congestion.

We are going to be discussing these new ideas for metrics at our next Technical Advisory Subcommittee meeting on August 21 in Seattle, and we invite anyone who's interested to join in that discussion. We'll also have participation available by webinar.

So the WECC is committed to providing the Department of Energy the results of our congestion analysis and our recommendations toward the end of the year, when we have finished the analysis of the OATI data.

The WECC will also be conducting studies about potential future scenarios using production simulation methods. Each scenario that we are studying will have different assumptions for incremental resources, and each is expected to produce different congestion patterns. We can't tell where the future is taking us, clearly, and so we are studying scenarios as a way to perhaps get an envelope of what might happen.

The scenarios we will investigate include 2012 case with one scenario with high gas prices, another with high hydro conditions, another with low hydro conditions. We'll also be looking at a 2017 case, and the scenarios will include a heavy wind resource case--that means much development of new wind resources; a heavy solar resource case; a case with 15% renewables over the whole west-wide area. Then adding onto that, increased energy efficiency, and finally, carbon emission reductions.

We will be offering the Department of Energy our recommendations based on these findings of our studies and particularly emphasizing the nearer-term 2012 case. Although I need to clarify that these WECC studies are meant to provide early indications of a need for transmission rather than be a definitive determination of need.

From our standpoint, looking at the results of these scenario studies also is important because of financially dramatic changes in resource patterns in the West, particularly in the future with widespread deployment of renewable resources. Because the potential for new renewable resources in the Southwest is vast and the need is great, as evidenced by growth of the renewable portfolio standards, historical patterns of congestion are very much subject to change.

In conclusion, I recommend that DOE considers in its congestion analysis the results of various forward-looking planning studies that will become available, as well as analysis of historical congestion. As has been mentioned, in addition to the WECC studies, there are annual planning assessments of transmission utilities and subregional planning groups, and those studies will help bring into focus where transmission congestion is expected to occur and what should be done to relieve that congestion. Thank you.

David Meyer:

Thank you. Yeah. Well, let me turn next to David--.

David Barajas:

David Barajas, Imperial Irrigation District. And I would like to--first of all, I appreciate the invitation of Imperial Irrigation District to this forum. Thank you very much.

I want to start with a brief description of what is IID and how it's interconnected to the transmission system of neighboring utilities that's taking into account the potential, what transmission constraint or congestion from IID's point of view.

IID is a publicly owned utility and we have, our service territory is about 6,471 miles. And currently we have a little more than 140,000 customers, with a peak load of around 150 megawatts. We are a high watt area with small loads, you know. We have substantial 230 kV transmission lines and--I'm sorry, 92 kV, 230 kV and 161 kV. Our 161 kV is an aging system that runs between Western Area Power Administration and IID. And I will make more reference to this interconnection.

IID has interconnection with Southern California Edison that is called Path 42 at 230 kV level, Sandia Weapon link at 230 kV, Western Area Power Administration at 161 kV, and APS at 69 kV. And I will make some comments that were done for the firm Southern California Edison in this report and Intertie within the IID.

IID has not actually experienced drastic congestion in their system, in our system. And IID is currently normally working on their transmission expansion plan to see--I mean, with two objectives, I mean serve load and promote renewable energy that is developed in IID's control area. IID has about four or five projects that we'll promote in a certain way, limit transmission constraints that has been identified at this moment.

The current project that we have is the installation of Central Bank for us; it's a 230/92 kV transformer, 300 MVAs. For IID this is a big project, this type of transformer is the first one that we buy in the last 20 years. We have an IID Dixieland project, a 230 kV project from Imperial Valley San Diego Gas & Electric Station to an IID existing power station; it's a 230 kV line. This will increase our deliverability into San Diego for up to--these two projects together will increase about 400 megawatts of deliverability from IID into San Diego Gas & Electric Imperial Valley substation.

We have the Midway-to-Bannister line. It's a 230 kV line going into from the Salton Sea area, geothermal area into the existing IID's collector system, 230 kV system that ended up in this Path 42 interconnection with Southern California Edison. IID, in certain, we were discussing about the chicken-and-the-egg concept of our transmission line generation. IID's Board of Directors have taken the position to try to promote geothermal

development, and we're building like this project, the 230 kV line will bring that existing 230 kV collector system into the Salton Sea area.

That is to promote geothermal, so facility interconnection to it. Something that we have been finding is that, for a small generation, 50 megawatts units, I mean sometimes there are facility interconnections required to--I mean that as a utility, we need to request, sometimes kill the project. So IID is trying to minimize this impact in building this transmission line to the Salton Sea. So far we have over 100 megawatts of transmission service requests into this line section that is going to go to the Southern California Edison.

Also IID is working on Path 42 upgrade, and this Path 42 in this report was addressed as a projected heavily congested path. Actually, it's supposed to be projected to be congested in 2008. So far we haven't had any congestions in this path. I mean, this has not happened. And so it has been performing very well so far.

But we know, and we have a request to increase that rating of dispatch. So IID and Southern California Edison are working together to increase the path rating of Path 42 from 600 to 800 megawatts.

And how we're going to achieve this rate increase, we're assuming there are only going to be studies that the Path 42 has a PTC rating of actually, not specific total transmission capacity, actually holds 800 megawatts. This Path 42 is a WECC-rated path of 600 megawatts, so we expect to accomplish this rating increase just by doing a study with the Southern California Edison (inaudible).

Also, IID is working together in a joint project with APS/SRP and Welton Mohawk in the North Gila 500--North Gila to high--to North Gila to Palo Verde 500 kV line. IID is participating with 20% of that transmission capacity, ended up transmission capacity of this line. Also, we are working in building a 230 kV line from North Gila to Highline Substation. This is to bring in the resources from Palo Verde into IID's service area.

These lines are intended and requested to serve load to IID. In certain way also, will alleviate potential transmission constraints from east to west into California. But this line will serve--I mean, have different goals. I mean, we're going to use it to serve low priorities as the main justification to participate in this line. But at the same time, we'll facilitate the export of renewable resources into Arizona--in both ways, Arizona to California, California to Arizona.

IID is also, have another project that is the Coachella Valley to Devers II line. Devers II is a line that will be proposed 500 kV to 230 kV station. This 230 kV circuit is a 35-mile line that will be basically parallel to the existing Path 42 that also traverses a heavily congested area.

IID has around 3,300 megawatts of queue, in the generation/circulation queue. From that, 2,546 megawatts are renewables. For an area that we have a system load of 1,000 megawatts and it's a lot of generation for us, you know. And we have--our transmission expansion plan is trying to accommodate this. In 2004, IID was requested by the CEC to develop a transmission expansion plan to facilitate the export of 2,000 megawatts of geothermal generation from the Salton Sea area out to the neighboring IID boundaries--in this case, more focus in California.

IID participated in creating the Imperial Valley Study Group--a lot of information is available through the internet--and developed in conjunction with all like the San Diego

Gas & Electric ATS and multiple utilities developed a plan of service--a different (inaudible), we developed a plan of service to export up to 2,000 megawatts. IID's transmission plan basically is following the footprint of these results of the IVSG. Our projects, they are coming, they are the ones basically that were requested and addressed in the IVSG report. So we're following that.

With respect to this report, I mean, and have comments on the 2006 report, I see a lot of good information about mitigations, you know. But I don't see that report focusing in the constraints. And the constraints drive the mitigation. And sometimes a weakened focus in that type of constraint that is driving that--I mean congestion, sorry. The constraint drives the congestion. Sometimes we focus on the level of constraint that drives the congestion. We can probably solve a lot of problems; ratings and equipment, facilities, equipment, ratings from the equipment also can drive congestion.

We can have facility ratings established and be all in the same frame of reference, I would say. We all have different--sometimes we are too conservative, I mean, and sometimes where people try to go to the extreme levels of the facilities. But we can come out with a, in this everybody has rate, facility ratings, but we need to come out with certain standards how to rate those facilities. And those transmission constraints can evolve into transmission congestion.

An example of this is Path 42. IID has identified this as a low-cost transmission upgrade that will create a lot of energy for the final transmission system. This report has mentioned this. There's a lot of congestion in southern California and focusing Path 42. The (inaudible) Path 42 is basically the need of changing conductors, transmission structures reinforced, and basically it's a low-hanging fruit there. And doing those upgrades will actually eventually create a lot of benefits to the region.

And other than that, I have completed my comments.

David Meyer:

Thank you. Let me start off by asking the panel to focus on this question I raised before about, "As a planner, how do you properly value the contributions that only generation can provide, or only transmission can provide, or on the demand side?" If we--I want to--in particular, as the--we are in a situation where, as we bring on greater amounts of renewables, the planning context is changing.

And I just want to hear more from you how you're dealing with that. What are the issues, and in particular, how does it affect transmission requirements and--but other kinds of things that you think are extremely important as well. So--whichever.

Jerry Smith:

I'll go with that as a start. I'm Jerry Smith with WestConnect. I'm not sure that I would agree with your hypothesis that, simply because we're dealing with renewables that we're dealing with something new.

I think, on the earlier panel, Dave Shelton referred to in the past when we have had remote generation over the decades, that it's developed, there has been the necessity to plan the associated transmission requirements to accompany those new generation projects coming online.

I see renewable energy in the same fashion--that it tends to be often location-specific and often not in the location where the load to be served is located. So it simply implies to me that from a planning perspective, you need to plan the transmission elements that need to accompany the renewable resources that are going to develop. And I believe that we have already in progress significant numbers of studies that are engaging in that

fashion, starting at the top end with the Western Governors' Association's WREZ study work that is just getting started in identifying zones on a westwide basis.

And in WestConnect, we have several activities currently engaged. In Colorado there is the Senate Bill 100 requirement that they plan transmission to accommodate renewable generation implementation. And as you heard from Lisa Szot in New Mexico, there are efforts looking at transmission to engage and develop collector systems in New Mexico for renewables. In Arizona there has been study work that has been completed this past year as part of a SWAT renewable task force, looking at conceptual transmission plans to accompany renewables in the state of Arizona.

And certainly in Nevada there has been considerable study work considering transmission required to engage with renewables being deployed in Nevada. And this coming year there will be a WestConnect-wide study that looks at the entire WestConnect footprint in terms of renewable transmission needs. So I believe that we have already engaged, at least in large part in the West, considerable efforts to define transmission needs for renewables.

I think the bigger problem is more in terms of, irrespective of where these renewables are located, those parties that have the obligation to serve the local load have a need to ensure that they can import from whatever location those other resources are coming from, transmission to import to their load area, the new resources required to serve the load.

The alternative to that is building local generation. And to the degree that a state or a local area chooses to not build local generation, they are going to have to build transmission if they're going to provide service to the growing load.

David Meyer: Others want to speak to this?

David Barajas: I will say that there is no solo project. I mean, generation also needs to drive transmission. I mean, having only generation in one load pocket, load cycles from day to night, and having access to this one type of generation, and you can actually despite a whole dimension from the Internet. So eventually, I mean, any type of generation will have to drive the beginning of transmission. And I think that, what the renewable transmission and our district planning and transmission groups, and we are trying to come up with an ultimate plan. But essentially, the two, transmission and generation, are driving together, in my personal point of view here.

In order to be efficient and try to sometimes to provide the lower cost of energy to lower costs, sometimes we need to have multiple resources and be able to have a good portfolio. Because all this is cost, you know, and when you're going to have one-size-fits-all, I mean, this thing doesn't work, you know. And you need to provide maintenance to the equipment, you have a (inaudible) we settled with (inaudible), and they are just for supportive units. The concept is you have a mix, I mean it's a utility yourself. We try to maintain that mix, a good portfolio and having transmission availability from different resources to IID to try to manage and control the uncertainties of the fuel. And you're going to depend on one type of fuel all the time, I mean, it's going to be putting all the eggs in one basket. And you're putting your company at risk.

David Meyer: You've touched on one of the things that I wonder about from time to time; that is, there are just a lot of uncertainties here in terms of technological development, technologies that are still in a state of evolution. And how much transmission we may need in a particular area can be very much affected by how some of those technological things play out.

So it seems to me as a planner, you're going to need to--I guess my instinct would be to look--how do you preserve flexibility in the system? How do you try to make the system robust in the face of a wide range of scenarios? And I don't know whether that matches with some of the work that you folks are doing in TEPPC.

Jim Filippi:

Yes, this is Jim Filippi. Yes, it does match with the work that we're doing in TEPPC. It's not an easy match, but the technique generally is you would study different plausible scenarios for the future and see what each scenario would indicate would be the need.

And the ideal would be if you could find some solutions which address more than just one of those scenarios. So they would have a benefit across a wide range of plausible future conditions. That's a very desirable thing to achieve, and if you can demonstrate that a project would do that, it'd be much easier to justify the project.

I'd also like to comment a bit on your earlier question about the tradeoffs between resources transmission and demand measures. And, you know I come from a traditional, from a long transmission planning background. And back when I got started in a vertically integrated utility, things were much simpler. I would just ask someone, you know, "Where's the generation going? What's the load going to be? We'll plan you a transmission system." And today things are not nearly so easy.

And where that is taking us to, really, is, what I could call integrated system planning. And, again, in the utility we used to do vertically integrated system planning. But now, with so many parties and companies involved. and it impacts reaching over wider regions, we really need to do something like this communally. And I believe that that is exactly what is happening in efforts at TEPPC in the Sub-Regional Planning Groups and the Western WREZ effort and the other local renewable energy efforts.

And what they're basically focusing on is in large part, what is going to be the delivered cost of capacity of energy. That's really the, I think, where it's all ending up is we may have objectives for achieving renewable resources, but when we wanted, when we look, evaluate the different zones, we're going to consider what the cost of transmission access would be to those zones. And those zones which could be accessed most economically and have the best quality of resources, such as the overall delivered cost, is the most economic with the fewest environmental impacts, those areas are the ones that ought to be preferred.

Jerry Smith:

Thanks. David, could I add to that? I think that what that leads to, then, is the issue that Lisa Szot raised earlier in Panel One, and that is if the resource zone is in one state and it needs to be delivered several states away, how do you facilitate the transmission to give it for the long haul?

Just to get it out of the state to the next state, and then go to that state and figure out how to get it to the next one, you need a regional view of what it takes to get the resources from wherever they're going to be located to the load centers in general. Now, certainly it can be characterized that with California representing one-third of the load in the West, that it's naturally going to come to the fact that California is going to be a major player in the needs for resource development in the West. And the question is how do you get the transmission built to deliver to California?

But along the way, you can't forget there needs to be on- and off-ramps on that transmission system to accommodate other states, other load centers, along the way. And

that's the challenge that we face in planning the needs from a system perspective, not from a project-by-project perspective, or from a state-by-state perspective.

Warren Belmar:

I might, just--this is Warren Belmar again with the Department of Energy. I agree with everything you're saying, and we do have a number of other models that have addressed similar problems. Right now we're talking about how the regions could get together and cooperatively resolve this. And in the discussion during Panel One, everyone agreed, "We can and we should get together as long as you pay for it, not me."

The historical way of resolving those kinds of regional problems have been the balancing of federalism and national policy. That terrible word "preemption" creeps up every once in a while. In the natural gas area in the 1930s, Congress decided that in order to get natural gas from Texas to New York, we would create a Federal Energy Regulatory Commission within the Federal Power Commission.

And if someone wanted a license to build a pipeline to transfer that regional resource to another region, it was a national issue which called for a national solution, which created a national entity where there had been none before. Of course, those were the days when we also didn't have securities laws, there were federal and then we had those. But it was an evolving process and in the natural gas area, the Federal Energy Regulatory Commission is the place that everyone goes to--not to each state--to establish a transmission line.

Similarly, and I think Mr. Shelton was relating to that earlier when he spoke, WAPA's role in developing the West is not to be forgotten. There was a federal decision made to develop hydropower in the West. And in order to, one, develop that hydropower and to transmit to the markets that needed it, we created a federal entity to just go ahead and build the dam and then build the transmission lines.

Now today, we're talking about a totally different approach, and that's wonderful. And if you can work it out voluntarily among the states, that is fine. If not, the 216A backstop is only when you can't do transmission, whether it's congestion--it just creates a backstop if you can't work it out.

There are other approaches that could be undertaken also. I'm not advocating any; I'm just trying to highlight that. All of the problems that everyone seems to be identifying might to some, at least, appear to be more resolvable by national action rather than regional action. That's a policy judgment that others will make over the course of time, and only make it if the region wants a national involvement.

And so I guess we're going to have to wait and see how you all work these things out among yourselves. And we certainly hope that you do, because there's no reason why it shouldn't be done the way that the local regions want it done. But at some point, I think everyone's going to have to decide that, whether they want it done perfectly or they want it done, and then it starts getting back to the reliability issue is a major factor to be considered in this whole evaluation process.

Brian Whalen:

David, I'd like to make a few points.

Dave Meyer:

Sure.

Brian Whalen:

First of all, I'll defend the West Coast for their past cooperative efforts. You know, we have not developed this system in a--well, myopically. The joint projects--there's a huge

extensive list starting probably 50 years ago. Pretty much everybody in the room I have a joint project with. So we do cooperate, and we do get things done.

The next thing goes sort of to your pricing question of who pays. And I want to give you a little example of some issues that Nevada Power had. We've just completed last year, the Centennial Project, which was a 3,000 megawatt, 500 kV system for seven parties--mostly IPP, some Nevada Power--originally envisioned as a system to collect generation sited in Nevada, mostly for delivery into California. It was funded by Nevada Power with the surety that the interconnecting IPPs would pay for the transmission, and those payment streams would keep Nevada Power whole.

None of those contracts has survived in its original form. Some of them were slight changes in the finances due to FERC's at-or-beyond that was developed after the system was put in place; some of those were complete repudiations of the contract in whole. If it weren't for the load growth within the state of Nevada and our ability to acquire some of those IPP generators at less than what it would have cost to build them, our company would've been in very dire straits.

So when people are talking about who pays, we had the potential to have a very bad taste in our mouth because we came close to getting a \$300 million bill left in our lap. The Commission still is very happy to approve transmission for anyone who wants it, in state or out of state. Our projects have shown that. But there is a risk there, and that's just one example so that you're aware that just because you have a Transmission Service Agreement that says "X" amount, that doesn't necessarily translate into that payment. And even if it does, you may be behind five or six years of legal battles to get there.

The last thing is when you're discussing demand side versus traditional thermal versus renewables, particularly on these multi-state projects, one of the things that I've seen as a transmission planner--and I'm not on our merchant side, so it's just my observation--it is that to actually price what the renewables are in another state is difficult to do. Wind is relatively easy to price, if you have the proper sodar to find out what the actual wind resource is. And so it can be very easily added to the transmission cost for delivered energy cost.

Geothermal, unless you have a well in the ground already--and even if you do have a well in the ground--the development is very speculative. It's risky, and so the cost of--well, the likelihood of getting a most of our costs seven years in the future, which is when the transmission will be ready for one of these major projects, it's tough. And then with solar--you know, our solar trough plant that just came on, I believe, last year, Nevada Solar I, which is the largest solar trough plant in the United States at this time, we know what that cost is and we know what its performance is. But it's variable and with PV, particularly large scale, there are significant operational issues due to its almost instant intermittency due to cloud cover that have not been addressed.

And so, there's, these are just some of the transmission planning geek perspectives on why I think it's been slow in developing multi-party, multi-state renewable collector systems.

David Meyer:

Well, that certainly is the kind of thing that I think about when I think about some of the technological things that we're dealing with when we try to bring on large amounts of renewables in a short period of time and build a transmission. And then every once in a while somebody says to me, "Well, we shouldn't grow out that big network because 30 years from now we may be looking at ourselves and saying, 'Why on earth did we do that?'"

Well, I try to work back from that and figure out where might we go wrong and how do we--?

Brian Whalen: Fortunately, the transmission network doesn't care what color megawatts you put on it. And so if it's properly designed and regionally designed, you may think that you're putting wind and you end up putting concentrated solar. And it may be going the opposite direction of where you thought.

David Meyer: Well, that's exactly the thing that it, it comes back to the robustness question. That I think we're going to say, "Yes, a lot of transmission's going to be needed to get us where we want to go," but at the same time we've got to recognize that none of us have the capacity to see exactly where this generation is going to be sited or what the mix is going to be.

And you're always going to have the wild cards that pop up from time to time that cause you to want to use the system in a way that you hadn't anticipated. And so it's--that's what the transmission system does best; it enables you to cope with that kind of thing. And so I, I'm starting to think that we need to, in some ways, think differently about transmission than many of us have. That it's not just this delivery mechanism, but it has a lot of other characteristics that we need to take into account.

Unidentified Participant: Not the least of which is if you need a one-lane highway, do you build an eight-lane because they will come? Or-- .

David Meyer: That's another issue.

Unidentified Participant: Do you build the eight-lane and then find out you've got one lane of traffic?

David Meyer: That's another question I wanted to raise with these guys was how do you size the thing, recognizing that we may grow into this thing over a period of time?

Unidentified Participant: Faking it.

David Meyer: Yeah, right.

Brian Whalen: Typically, we will size our transmission such as this end tie. Our vision is that is it not just a tie Sierra to Nevada Power line, it is a tie to the eastern side of the WECC doughnut together with 500 kV line. You know, we--LS power has a request to go from Ely to Midpoint, and if that happens, it will be a significant improvement to the western interconnection.

Warren Belmar: If I could just give one example--I'm Warren Belmar--just why I'm focusing on the issue that you're focusing on. I came to Washington, DC, out of law school in 1966, and the Federal Government had just built and opened up Dulles International Airport. And I got to learn how to fly a single-propeller plane on the main runway because they needed traffic, and the six times we took off and landed in a day were equal to the full commercial load at the airport.

It was a "build it and they will come" approach. But the only one who could've possibly spent that kind of money in advance was the federal government. And the federal government today is not the player that it was then. It's not the one who's going to pay to build the Hoover Dam and then try to recoup it over time from customers around the western perimeter.

So it's falling on your shoulders, and you've got to decide. Dulles Airport is now overcrowded, it is congested. It has constraints on flights. But no one knew that in 1966 except they thought perhaps--so when you consider what you're going to build and how you're going to pay for it, you've got to consider whether you're building--as you say you are, and thank goodness for that--not just for today but for tomorrow as well. Jerry?

Jerry Smith: Yeah, if I could add an example here maybe that will offer some additional thoughts. I think we do not lack for transmission projects being conceptualized to meet the future needs of the West. I think what is missing in the equation here is once these projects are defined, and in my opening remarks I cited two--the Frontier Project and the TransWest Express--that have stalled. The reason they're stalling is because there is not a long-term commitment to the resources that would enable those transmission paths to be exercised.

What we have in practice is a short-term view of our resource picture, and to build a transmission system that's needed long term, it requires a commitment to resources long term. And we do not have that, at least in the West.

David Meyer: So what would it look like? You mean long-term contracts with developers who have not yet developed the renewables capacity? Or--?

Jerry Smith: I think what it means is you look at integrated resource plans or the plans for the utilities are not well defined beyond year five in their resource portfolios. It's all speculative and all full of options. The unfortunate part is that the generation can be developed in a much shorter time period than these long transmission lines can get through the process of being sited and constructed. So that to me is the paralysis that we're experiencing as an industry.

David Meyer: Okay--I--yes, there--let me say that this panel is scheduled to close at noon, but that is in part to provide time to individuals who want to make statements. Now, presently, we have no individuals who have come forward to say that they want to make such statements--so, okay, we have one. Any others to take into account?

All right, so that gives us a little more latitude to continue this discussion. So I want to turn now to Alison and also Joe Eto to see if they have questions that they want to put to the panel.

Alison Silverstein: Thank you--Alison Silverstein. Following up on the discussion you all just had about renewables, let me re-ask you a question that I asked the earlier panel. The 2006 Study identified conditional congestion areas, most of which were centered around renewables and the possible development there. Can you all please comment on whether you feel that the conditional congestion area is a valid thing for the--for us to consider again in the 2009 Study? Or is there some alternate and more useful way that you can suggest for us to address the whole renewables or nuclear/coal development concept?

David Meyer: I'd like to ask Jim in particular to speak to that, if possible. That is, it plays into the robustness issue that we were talking about before. That is, in a way you could say is this conditional congestion that we're talking about, is that a condition that would emerge under a wide range of scenarios, or only under a narrower range? I mean, is that a relevant connection to draw between the different strands of work that's underway here?

Jim Filippi: Yeah, and I'll preface this by admitting that I'm not very familiar with how the term "conditional congestion" was used in the report. But I will offer that, the conditional

congestion is, I think, is exactly what we are getting to--at least my understanding of the words, just the plain language--is exactly what the TEPPC studies are going toward.

We are looking at the different scenarios of what could occur, and if such a situation does occur, we're going to have a model of that situation. It is going to, if I was going to indicate that there is some congestion, that we're also going to identify some conceptual transmission alternatives that would be possibly economic to relieve that congestion.

And so that is, I think that kind of information is good. I think for the market participants to understand is not necessarily sufficient, I would say, to provide a conclusive demonstration of need. But if there is a, if the situation is close, and I think you have a number of these scenarios, then, that would say that if they play out, they would justify the project, then I think there would be, that may be something to act on.

David Meyer: Others? Yeah? I mean, back to Alison's question about the general utility of this conditional congestion concept--.

Alison Silverstein: Just to clarify the concept of a conditional congestion area is, for instance, western Kansas or North Dakota, Montana, Wyoming. For Montana/Wyoming, if there were a desire for significantly greater amounts of coal development, there would be significant congestion because there's not enough transmission to deliver the coal to the markets, or from western Kansas, where there's a potential for significant wind development, there's not enough transmission to get the wind development to markets. And therefore there would be congestion conditional upon the societal desire to develop that set of resources in bulk.

Unidentified Participant: So that's exactly the kind of thing that TEPPC is trying to illustrate. Is that, and--but we are not trying to determine these, we're not trying to establish the need.

Alison Silverstein: Nor was DOE trying to say that there was such need, but that if the decision was made that these should be developed, then congestion of transmission would be an outcome.

Unidentified Participant: Right. And one of the reasons that TEPPC is doing these studies is to promote the development of transmission. We feel that if we analyze a number of these scenarios and develop conceptual transmission solutions, it'll basically jump-start the development of transmission when it becomes clear that a certain scenario may actually be going to occur.

Alison Silverstein: Can we interpret that to mean yes? It's useful to continue the use of a conditional congestion area?

Unidentified Participant: Well, certainly, TEPPC will be continuing it, yes.

Alison Silverstein: Thank you and do you all--Jerry, you there, too?

Jerry Smith: I would bring it more to talk about it from a local perspective. I think as states are developing renewable portfolio standard requirements that that poses the question to what degree there is adequate transmission locally to accomplish the purpose and the intent of those policy decisions. And I can tell you, in the state of Arizona the past year, the work that's been done has shown that the transmission system can accommodate very little new development.

And so if you're going to have certain types of resources developed in certain locations, it will require transmission be constructed to interconnect those facilities. And I think that is describing a conditional congestion issue on a local level.

Alison Silverstein: Where I come from, we call that a deliverability issue.

Jerry Smith: Absolutely.

Alison Silverstein: Except, going back to your framework, it's deliverability with respect to the sink rather than--as well as deliverability with respect to the source, which is what Jim is studying through TEPPC, right?

Jerry Smith: Yes. I would say the TEPPC effort is looking at this more globally, and I'm suggesting that the same issue exists on a local level as well. And regardless of where your resource is coming from, that local perspective has to look at what transmission is needed to gain access to the resources, whether or not that it's occurred. And those types of considerations also often result in reliability must run generation locally or limitations in transmission import, limitations to an area, such that it becomes problematic from a reliability perspective. And you would expect the local municipalities or states be engaged in ensuring that the transmission is there to meet the local needs.

Alison Silverstein: Okay. If I can ask you all another question. Brian--?

Unidentified Participant: Can I answer that one first?

Alison Silverstein: Please, yes, please.

Unidentified Participant: I think it's required that you look at the different potential resources and their probable locations, given the uncertainty in some of the technologies and where national policy on existing thermal is going. And so I'd recommend that you continue to do that.

Alison Silverstein: Okay, thank you. Next question--Brian, you made some good points about the existence and cause for local congestion and pancaking. And you mentioned much the same thing, Jerry. This takes me back to--I agree with everything you said, but I need to re-raise the question of the Department's responsibility is to identify national interest congestion. And can you give us your thoughts on how do we identify or parse the national interest in these different considerations?

I mean yes, you are describing absolutely valid and problematic local congestion problems, but is this something that the Department of Energy should be culling on the national report?

Brian Whalen: Those were specific examples, one of whom was actually out of the report. But just on the very highest levels, if you took a WECC map and traced the 500 kV, between Wyoming and Arizona there isn't any. So, that's obviously a problem, because any time you interrupt a 500 kV and the rest of that sort of reverse "C," you've caused problems in the response of the system. And so you have to limit the actual 500 kV so that the 345 through basically Utah and Colorado can take it out.

The other sort of very high-level tool that could be utilized is to look at the unscheduled flow mitigation procedures in WECC and which paths are qualified. Because those are the paths that people have essentially overloaded often enough that they've taken the time to get them qualified so they can have procedures to remove those overloads.

I mean, those are just two real high-level things, but as far as national interest, I think they're a good initial indicator.

Alison Silverstein: Thank you. Anything else on the national interest? Let me ask a follow-up.

Unidentified Participant: I would suggest that many of the things that I described as local congestion issues more than likely would not fit, in my view of what is national interest, unless they were not getting resolved.

Alison Silverstein: Which is a perfect segue to my next question. The 2006 report identified three different flavors of congestion areas, one with the two very specific national interests, national areas of concern. The second was the areas of concern, and the third was the conditional. The areas of concern were places like the Pacific Northwest and Arizona, where there's clearly a significant amount of congestion that wasn't getting fixed any time soon, it would appear. Is there anything that you're aware of that would cause those specific areas of concern that were identified in 2006, have they become of greater concern? Have they started to rise to the national interest yet?

Unidentified Participant: Which were those specifically?

Alison Silverstein: Pacific Northwest, Seattle, Portland, I-5 area, Arizona, the whole Tucson/Phoenix.

David Meyer: Right. There were four of them. The San Francisco Bay area was another.

Alison Silverstein: Although they were ticked about it.

David Meyer: Yeah. And then there was the, the New England area was the fourth. Yeah, sure.

Alison Silverstein: Should we be more concerned now about them than we?

David Meyer: I mean, Alison's point is have those problems simply grown worse over time, or have they been mitigated to some extent? Or are they--?

Alison Silverstein: I wasn't going to ask them about New England.

David Meyer: Right.

Unidentified Participant: I would be glad to respond on the one about Arizona, having been involved as an Arizona Corporation Commission staffer that had to deal with those matters. I would characterize that possibly the characterization of those as being areas of concern in the previous was a little bit of an overstatement. But I can report to you that additional planning work and construction of new facilities is continuing to progress that makes it less of an issue than it once was. And I believe the Arizona Corporation Commission is on top of the issue. And for evidence of that, I would refer you to the Biennial Transmission Assessment draft report that's on their website that have comments due to date, I believe.

Alison Silverstein: Thank you very much.

Unidentified Participant: That's good.

Unidentified Participant: I can also offer you a--just following on what Jerry has said, I think his advice applies generically that if these areas are being addressed, there should be documents on the record that show the progress that's been made in the areas. So, for instance, for the San Francisco area, you can refer to the planning documents that have been published by

Pacific Gas and Electric and by the California ISO, their annual transmission plans, and see the progress that has been made in making sure those areas are reliably and economically served.

Alison Silverstein: Which, if the Chair will allow me, frankly, to my last question. You guys are like perfect segues to that, and I thank you. The last question echoes back to a point that was made in the 2006 Study and that Laura repeated earlier that we talked, heard lots of people saying this in 2005. What starts out as economic congestion can grow into reliability problems in the future.

My question for you all as transmission planners is this--what are the symptoms? At what point should--yes, the original DOE mandate from congress said, "Worry about economic congestion as well as reliability congestion,"--but most of the metrics that we have identified thus far are sort of, kind of their descriptors--U90, U75, whatever. And don't say, "Geez, the lights are going to go out, unless something happens here." Any suggestions on how do we find or how do we characterize those reliability panic buttons? Or when do we cross the line from some little commonplace U75 or U90 statistic into a, "Holy Cow, this is a problem!" congestion metric?

Jim Filippi: Yeah, this is Jim Filippi. The congestion metrics like U75 and U90 are indications that you've got a heavily loaded system. And I think at that point what the situation merits is further investigation or more detailed investigation.

So one example of the kind of investigation you might have is that for--the NERC standards and the WECC standards require you to, planners to analyze what they call extreme contingencies. And so this way they indicate an area where you ought to be looking more carefully at extreme contingencies.

In addition, and to address something that David brought up earlier, transmission also will have what is known as an insurance value once it's developed. It can be used and helpful for situations that you did not anticipate. The ISO, in developing its transmission economic assessment methodology, has looked quite a bit at the, how to quantify and value the insurance value of a transmission line.

So this is something, I guess, again, where you have indications that these congestion metrics like U75 and U90 are truly heavily loaded systems, these may be situations where you would again look for scenarios in which a transmission would provide valuable insurance.

Alison Silverstein: Backing up a step, can we infer from your earlier comments on this that we should be looking at, for instance, NERC operating violations specific to transmission and generation as an indicator that we are walking into reliability-specific congestion rather than merely, "Oh, look! There's a heavily loaded line"? I mean, your example about Bridger is perfect. That, yes, it's a heavily loaded line. It was designed to be. Thank you very much. That means we're doing it right. That doesn't mean it's a problem.

Jim Filippi: Yeah I'd say that that's an indication that you should give it careful attention, although the attention that ultimately that may be needed is that improved operating practices rather than new transmission. But I think my bottom line here is that when you run into these indications that you have a loaded system and there may be benefits to transmission development, what you really need is a more detailed effort to develop a record that something needs to be done.

And, you know, so--and I think this goes back also to what many of us here have been saying--is that DOE ought to look at the detailed studies that others are producing and have that be considered as part of whether there really is a transmission congestion situation that needs to be addressed.

If there's a good record that detailed studies have been done, there are plausible situations where you could run into a reliability violation, or just an economic, large economic loss in an area, those are indications, then, that something should be done. I would be hesitant, though, to take that kind of action just based on a U75 or a U90 indicator.

Alison Silverstein: Thank you.

Unidentified Participant: A useful tool on that, but one that's very difficult to derive, would be the limiting element for each path's rating, post its critical outage. Unfortunately, digging through the hundred-some odd path ratings for the WECC is going to be a very onerous process. But it will very easily show you where the weak points are. You agree, Jim?

Alison Silverstein: In fact, half the people at this table could tell us about, of needing to dig, but thank you very much.

Unidentified Participant: Yeah, also is that, not only just what the weakest links are, but if there's been some work on what the solution would be.

David Meyer: See if Joe has some questions here?

Joe Eto: My question is a repeat also from the earlier panel--this is Joe Eto--which is that the Department identified a number of areas and classified them in certain ways in the last study. Most of the discussion--which I appreciate Alison raising--has been what's happened in those areas since then? So the converse of that, of course, is what has taken place in other areas that we might potentially need to take a closer look at, as opposed to just looking at where we looked before?

Jim Filippi: This is Jim Filippi. I think one of them is obvious. It's my new business. It's renewable resources. With the renewable portfolio standards and the development of the renewable resources is really going to change loadings on transmission lines and require development of new transmission. I think that's what's spurring the renewable energy zone efforts that are going on now. So that definitely is, I think, a big, if not the biggest, change.

Brian Whalen: For Nevada Power I would say the interconnection between us and PacifiCorp. If you look at the extensive gateway projects that PacifiCor is proposing, plus the extensive projects that we're proposing, plus the transmission service requests between the two utilities, that is becoming a very dynamic area. And that would be the 2-2C specifically, but because it's linked to 2-2B and A, you'd have to look at all three.

Jerry Smith: This is Jerry Smith. I would add one other thought to this spectrum of responses. And that is there's a lot of focus right now on renewable energy development in our planning arena. The reality is there will be some additional generation that no one is looking at at the present time. What will the impact of those unknown generation developments pose to the system?

Unidentified Participant: (Inaudible - multiple speakers)

Alison Silverstein: We're not worrying--this is Alison Silverstein. We're not worrying about nuclear, because it's going to take them long enough to get through permitting, and we'll be writing a new study by the time that's being upgraded. Back to the broad TEPPC planning effort. Back when we were working with you all in 2004 and 2005 on these studies and you were doing some very nice scenario analysis, you all sort of assumed in particular new pieces of generation and new lines, into the 2000 and then whatever years we were looking at, projecting for.

We were concerned at the time that, by assuming in new transmission and particularly new generation that were relatively common to all scenarios, we were concerned that you might be essentially assuming away a certain part of the congestion that we were trying to identify. Is there anything you can tell us that would explain what you're doing now, whether it's different and why we shouldn't worry about assuming away congestion? Because you're making all the right assumptions about transmissions and actually, you all are great at doing studies and kind of slow at building. So we need a little reassurance here.

Unidentified Participant: Okay. Well, we are concerned about that as well, and we have made a conscious effort to review all of the transmission that's been added into a case and to be careful that we are not adding unwarranted amounts of transmission that will assume away the congestion. We're also taking care to document which of those transmission facilities have been added and which have been left out. And so yeah, I don't, I don't hold any hope that we're going to be doing this perfectly to everyone's satisfaction, but at least we're trying to make what we do transparent. And if the need arises, the database will be available, and we or others could use it and modify a run to take out certain transmission facilities.

Allison Silverstein: Jerry?

Jerry Smith: And I would add that it's certainly true that we have new projects, a large number of new projects that are being conceptualized today that were not on the board for consideration back for the previous Study. And so to the degree that they offer different impacts solution-wise, I think would be understandable. And hopefully that's part, again, of what will come through the TEPPC studies.

Allison Silverstein: Did you all ever actually go back and look at the lines that you assumed into the last set of scenarios as having been built and operating for the study years? How many of them ever actually got built? I mean, are we sort of re-assuming the same things for the new studies, or are we making up new and improved set of lines?

Jerry Smith: Right. The way the cases are put together are-- well, WECC's power flow and stability cases has an annual program to produce new cases. And even for a given year, they will update the cases. And so we, TEPPC, will start from a fresh case that has been newly reviewed. Each review will be comprehensive by all the WECC members and will take out the transmission that didn't get in and put in new projects that have been identified.

And so when TEPPC gets that power flow and stability database and turns it into, then, the production stipulation database, we again review those transmission projects and, to make sure that it is consistent with the latest information.

Allison Silverstein: So is there some degree of certainty or probability, or, "Yes, this sucker's been permitted and therefore it's reasonable to assume that it's going to be available in 2011?"

Unidentified Participant: Sure. We categorize the transmission projects to their different stages of development. So yeah, the best ones are, "It's permitted and under construction." Then there may be

others that are permitted and not under construction, and with different degrees of certainty. And so we have basically come up with some rules about for which type of scenario you include which class of projects.

Alison Silverstein: So there's some handicapping attached to the assumption?

Unidentified Participant: That's right. And it's not going to be perfect, but we try to do a reasonable job on it. And backcasting, I think, is--we typically don't do backcasting. It's by--well, it's more work than we can manage, basically. We have enough work just producing more future, new future cases.

Alison Silverstein: Thanks very much.

Unidentified Participant: Alison, there is one other response to that question, and that deals with the NERC reliability requirements that are in place today are driving utilities to now identify transmission plans 10 years out to the future to deal with resolving reliability concerns with more specificity. And that is starting to emerge in the plans that are being fostered and communicated in the West.

Not all of those at present are getting in the cases that Jim has referred to as being used for the TEPPC studies. But I think in the future, somewhere down the road, there will need to be some closure on the issue of are these projects really required for reliability purposes? And if so, they should be in the case, or the alternative solution, whatever it is, that assures the reliability. And then you are able to more accurately judge to what degree congestion truly would be a concern or not.

Alison Silverstein: And have you all, has anyone in the West looked at the track record of the utilities at identifying, at getting built? The projects that are identified as reliability necessary?

Unidentified Participant: Well, certainly, where the rubber hits the road is the operating arena. So the utilities need to present planning studies that demonstrate the reliability. And then, as time goes on and we approach more the operating date, WECC has a Transmission Study Subcommittee that reviews the base cases, the nearer-term base cases, and then has a program to take contingencies on those cases, take outages, see how the system performs. They're looking for performance problems.

Alison Silverstein: Okay. What you're telling me is the study process. What I'm asking you is this--every one of your utilities has a shopping list of projects that you have identified as necessary for reliability purposes, to avoid being in NERC violation, right? The operational necessity, you need to upgrade this transformer, I need to build a new substation, I need to reconductor this line, I need to--fill in the blank. How is the track record of individual utilities in the West at getting all of those individual reliability-necessary projects built?

Forget the big inter-regional or across state lines--just getting the small reliability stuff ground out?

David Barajas: The new NERC, I believe, is standard CPL 01 to 04, requests an actual schedule. They're more stringent now. They're addressing exactly the same issue that you're mentioning now. Do we put a lot of projects and they ended up not built? So a new method standard for those things that Jerry mentioned, they're not only requesting you to mention the project, they mention--they want you to--they're also requesting your schedule and materials, procurement, long-lead equipment. They're asking a lot more details, they're beginning to, they are getting to the preliminary engineering. They ask you, like I said, you need to put the schedule and put this long-lead equipment.

So basically what they're trying to look is, "Tell me really that you're going to build it." So every year when I have to start doing this study and they're going to have to be available for NERC. So actually NERC is taking a company into account.

Alison Silverstein: Thank you.

David Meyer: I'm going to close this panel and give Larry Chaset his opportunity to make his statement. You can use the podium if you'd like.

Larry Chaset: No that's fine; I'll talk here. Thanks, Dave. I've got a number of points that came up during the few panels, the two panels we've had this morning, and I really appreciate all the presenters. I think we've heard some very interesting and useful information.

My first comment is I want to talk for a second about the cost allocation problem, which was brought up this morning. And it is a problem. I think on this side is-- this side is still here, and we agree that cost allocation is a problem for some projects. But I want to say, but not for others. And the point I want to share is the "but not for others." I would also note that I don't think there's anything in EPAct Section 1221 that gives DOE direction as to how to address the cost allocation issue.

I think it's beyond the scope of what you need to do here. It's really a FERC problem in the end, and I just would note that in the Midwest ISO, where they had a big cost allocation dispute a year or two ago about, you know, the folks in the Dakotas who have got all these resources they want to ship to Chicago--who's going to pay for it? And they came up with a stipulated allocation across the region of three zones. And that was a very good solution. And frankly, the cost allocation problem's going to have to be resolved through that kind of collaborative approach among parties who are competing, frankly.

ISOs--I will say to my colleagues in the West who are not in ISOs--they really help when you're dealing with cost allocation. And my point, the point I want to make on cost allocation is that, you know, sometimes it is a problem, but sometimes it isn't. Now, I just want to point out PG&E has a large proposed multi-state project to bring energy from Canada, wind energy and largely wind energy, down through the Pacific Northwest into northern California--big project, multi-billion dollar project.

And, you know, based on the latest I've heard about that project, they have a number of willing project participants who are going to share in that. And frankly, you know, once PG&E's share of that project is identified, whether it's 35%, 40%, 45% or 50%, whatever it is, those costs will ultimately, once the project is built, they will get rolled into PG&E's transmission revenue requirements at FERC.

And so my expectation is that, you know, some of these projects, where you've got them reasonably well subscribed, they will get built. Along similar lines, within the California ISO, we, our Commission's taking the position that all of the new transmission that's going to be needed to access renewable energy should be built on a rolled-in basis. Under FERC's rules, presumably, you know, when generators interconnect, the generators are supposed to pay for their share of the network upgrades and then they get repaid over a five-year period.

Frankly, we think that discourages the generators and doesn't get the transmission built very quickly, either. So we have taken the position with CAISO that--and we're going to take this position with FERC as well--that these costs of developing transmission to

access renewable need to be billed by the utilities--or if not the utilities, the independent transmission companies--on a rolled-in basis. So that the lines are built, the builders, the transmission companies, the ILUs start getting their revenue requirement right away without having to go through this elaborate--you know, generators paying and are re-paid over time.

So I think the cost allocation issue is a resolvable one, but it's going to take folks working together. As to some of these multi-state projects where people are pointing--you know, someone else should pay--you know, I think you recognize this problem. We recognize this problem, but it's only going to be resolved by folks working together. So that's my thought on that.

My second point has to do with a problem that we've hardly talked about, although Warren mentioned that the DOE is coming out soon with a rule on helping your sister federal agencies coordinate on transmission siting. I really look forward to seeing that rule, but I'm going to tell you--the problem we've had with siting is federal agencies. It's not our Commission, it's not the utilities, the Forest Service. But to a lesser extent, the BLM has held things up. And we would encourage DOE very strongly in its rule to take, you know, the whip hand in helping to move these horses forward quickly. And I really look forward to the rule and hope that you will be taking a strong leadership role in helping to get some of these federal agencies that have held things up, moving forward.

Let me just give you the one example that particularly grates on me. In March of 2007 we approved, our Commission approved, Tehachapi segments 1, 2 and 3, which are the first part of a large build-out to accommodate renewables 100 miles north of LA. And we approved it in March 2007. We're still waiting for the Forest Service to issue their Special Use Permit a year and a half later, that's not the--.

David Meyer:

Right. Let me interrupt you. I'm going to have to leave to catch a plane. But your statement will be in the transcript. Warren will be here to carry the discussion forward, but I'm going to have to leave.

Larry Chaset:

Okay, well those are a couple of the most important things I wanted to point out. But Warren will hear and Dave, you'll read. So--.

My next point has to do with--you know, we've seen, from the queues, and the queue is a problem not just in the West, but all over the country. The Midwest ISO has a serious queue problem, and the Northeast has a queue problem. Not all of these renewables in these queues are going to get necessarily built. And I just want to identify that the WREZ progress, westwide and more specifically in California, are renewable energy transmission initiatives and the RETI process will be identifying the most cost-effective renewable projects to be built.

And when you look at where the transmission zones are and what the cost--where the renewable energy zones are and what the cost to build the transmission to access them, my guess is that the closer to California load renewable energy zones are going to be, the ones that are more cost-effective to develop than ones in say, New Mexico--I mean, for solar in particular.

So that's something to keep in mind. There is going to be competition among these various renewable zones. They're not all going to be developed in the same time frame; some of them may be developed 15 to 20 years out. So we shouldn't design corridors or identify congestion based on the fact merely that there are folks out there who want to interconnect. I think that's the key takeaway for DOE on that point.

My next point. I agreed with a lot of what Jerry Smith said, but I do want to take exception on one point, which is he was talking about the CAISO's queue being backlogged and what CAISO has been doing with our utilities and our support and participation is--I think his words were "too little, too late." I beg to disagree, Jerry. I think we've actually done a lot, we've accomplished a lot.

The CAISO is about to file a new tower that will really facilitate cleaning up the queue and we hope, within a year or two, the queue will be entirely gone and all of the interconnection requests that are viable and realistic will be studied. And that should happen, certainly by end of 2009, early 2010, that's our goal. So we think that there is real progress on that front, and I want to beg to differ with Jerry on that one point.

And I do want to say that in terms of California, Jerry said that, you know, on the receiving end, things were not as encouraging. California, our Commission, did approve the Palo Verde/Devers Project over a year and a half ago. Then, a year ago the Arizona Corporation Commission, they didn't approve it. Don't blame the receiving end for that one.

We're obviously working with the Arizona Corporation Commission. We think that there are some real benefits to having that line built in Arizona, and we're hopeful that that line will eventually be built from Devers to Palo Verde/Haciampa west of Phoenix. And the fact is that that one line alleviates the main congestion that was identified in the SWAT Study--or the STEP Study, not the SWAP Study--the STEP Study, which is east of the river/west of the river congestion.

So that's another point I wanted to make, and I think I have one more. And this is one I want to agree strongly with something Jerry said. He said that the problems for the load-serving entities to be able to import from wherever these resources are into their load, the renewable resources. And I just want to emphasize that our CAISO's planning process and the renewable energy transmission initiative process is undergoing, that's currently in play, are specifically designed to accomplish the identification of the transmission that's needed to access those renewable energies. So the process is happening.

I guess, my grace note on Jerry's comment is, you know, what he said is needed, at least in California, is already happening. So I want to leave those thoughts with DOE and I would expect that we'll be submitting some written comments. And thanks for your time and attention.

Warren Belmar:

Is there anyone else who'd care to make a follow-up comment or question? Well, if not, it falls upon me to thank you all for your time. This has been very, very helpful to the Department. We've had identified for our consideration data that is very relevant to what we're trying to do. And more importantly, we've met the people who could help us make this Study as thorough and complete and beneficial as possible. And for that, we thank you all for participating.

Having said that, the meeting's adjourned.