

ELECTRICAL TRANSMISSION GRID

HEARING BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE ONE HUNDRED TENTH CONGRESS

SECOND SESSION

TO

CONDUCT OVERSIGHT ON THE STATE OF THE NATION'S TRANSMISSION
GRID, AS WELL AS THE IMPLEMENTATION OF THE 2005 ENERGY POL-
ICY ACT TRANSMISSION PROVISIONS, INCLUDING RELIABILITY,
SITING AND INFRASTRUCTURE INVESTMENT

JULY 31, 2008



Printed for the use of the
Committee on Energy and Natural Resources

U.S. GOVERNMENT PRINTING OFFICE

45-340 PDF

WASHINGTON : 2008

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
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ELECTRICAL TRANSMISSION GRID

THURSDAY, JULY 31, 2008

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 9:33 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Jeff Bingaman, chairman, presiding.

OPENING STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

The CHAIRMAN. Ok. Why don't we go ahead and get started here. Let me make a very short statement and then defer to Senator Domenici for his statement. Our first witness is Senator Casey, who has certainly been urging us to proceed with this hearing because of the importance of many of these issues that we're dealing with this morning to his State.

It's been said that electricity is the lifeblood of our Nation. If that's true then the transmission lines, of course are the veins and arteries that carry that electricity, our lifeblood. Our electricity is increasingly important to our economy and our health and our safety and security and happiness of Americans. Generally, the importance of the transmission system is growing with each passing year.

Demand for electricity has grown by about a third in the last 15 years. The transmission system has not kept pace. It's expected that the demand will grow by another third in the next 10 to 12 years.

According to one witness there have been less than 700 miles of new transmission line that have been built in the last 10 years, less than that in the 25 years prior to that. So the North American Electric Reliability Corporation tells us that transmission investment has increased in the last few years. Proposals for new lines over the next few years have also increased, but the projected transmission will still fall far short of projected needs.

In the early years of the last century the transmission system was, as a conduit for interstate commerce, was not as important as it is today. Obviously it's grown enormously as a part of our economic system. Since the 1970s Congress has been trying to facilitate interstate trade in electricity.

It's been trying to deal with the transmissions issue, issues that arise from that trade. FERC has been trying ever since to develop a system of rules that eliminate discrimination in the provision of transmission services.

We did a lot of different things in our 2005 Energy bill that Senator Domenici and I led us on here in this committee. Let me mention some of those. We gave FERC authority to license and oversee an organization to develop mandatory reliability rules.

We gave FERC limited back stop siting authority, where the Department of Energy had designated national interest in electric transmission corridors.

Third, we required DOE to develop a system to facilitate decisions by Federal agencies which related to permitting transmission on Federal lands.

Fourth, we expanded FERC's authority over entities that had previously been non-jurisdictional.

Finally we required a rulemaking on an incentive based rates for transmission.

These actions were intended to overcome the balkanization of decisionmaking about transmission, and a main purpose of this hearing is to look back at these provisions; to find out how they are working; and to find out what else needs to be done.

There are four key questions that seem to me to be central to our hearing today.

No. 1, have we done what we need to do to ensure the reliability of the transmission systems?

No. 2, have we done what we need to do to ensure that the transmission system is operated in a non-discriminatory way that promotes genuine competitive electric markets, or electricity markets?

No. 3, have we done what we need to do to ensure that needed transmission will be built while protecting the rights of the public in that process?

No. 4, have the agencies that we charged with these tasks fulfilled their obligations?

I look forward to the testimony. Let me call on Senator Domenici at this point for his comments before we hear from Senator Casey.

[The prepared statements of Senators Salazar and Bunning follow:]

PREPARED STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Mr. Chairman and Ranking Member Domenici, thank you for holding this hearing on the state of our nation's electric transmission infrastructure. The Energy Policy Act of 2005 in particular ushered in a set of new policies with significant consequences for the operation and development of the grid, and I am grateful for the opportunity to examine the impacts that legislation has had. But more broadly, I welcome this forum for discussion of the state of the grid and what we can do to blaze the path forward towards wide-scale deployment of clean energy resources such as renewables and plug-in hybrids—technologies that will have profound impacts on the operation and management of the electric grid.

Our electric infrastructure is a modern marvel. Few stop to think about the complex collection of electric generation, distribution, and transmission infrastructure components that facilitate the virtually instantaneous delivery of electricity anywhere at any time. But unfortunately while reliability is the paramount goal of many electric service providers, I am worried that we as a country are not making the investments that will be necessary to maintain reliable electric service, especially in our most congested areas, and to take advantage of the clean energy and efficiency solutions that technological innovation promises.

The grid is obviously by nature highly interconnected. In reality, however, the processes for planning and implementing grid investments do not reflect this simple truth and are highly balkanized. This has real consequences across the electric sector. Failures to modernize and make investments in one locale can in the worst cases affect the reliability of electric service for customers in surrounding areas. As we discussed at a recent hearing of this committee, the slow, fragmented process

for siting and obtaining cost recovery for major interstate transmission projects is frustrating our ability to deploy renewable energy projects of all sizes and to connect them to load centers. We are all aware that T. Boone Pickens is on the warpath to make wind energy the dominant source of electric power in this country, and I applaud his vision and efforts. Mr. Pickens amplified these concerns in his testimony, explaining that investment in our electric transmission infrastructure is a bottleneck to moving forward with clean energy. In the West we have grand plans for major advances in renewable energy production. The Western Governors Association's resolution to deliver 30,000 megawatts of renewable electric power to the nation by 2015 is both lofty and achievable—but only if we can meet our transmission infrastructure goals.

Smart grid is another example of a major investment that needs to be made to modernize the grid. I am proud that in my state of Colorado, the major public utility, Xcel Energy, has partnered with several cutting edge companies to transform the city of Boulder into the first full-scale Smart Grid City. Smart grid technologies installed throughout the distribution and transmission infrastructure will without question revolutionize not only the nation's electric infrastructure but also consumers' energy-use self-awareness. The transformation from the present electric grid to a smart grid is analogous to the transformation from the analog telephone network of the early twentieth century to the internet. The transformation will be that profound. Wide-scale deployment of plug-in hybrid vehicles and distributed generation depend on the real-time intelligent management of the grid that only smart grid can provide. The question is, how will we get there? Are we doing everything we can to put in place the improvements to the grid that will enable the greatest energy savings and that will provide consumers with the information they need to make real choices about their energy consumption?

In many respects our path to the economic, energy, and environmental security promised by our nation's growing Clean Energy Economy depends on the grid's capabilities. "Electrifying" a huge swath of the transportation sector with plug-in hybrids and thereby reducing our dependence on foreign oil and making renewable energy the dominant source of electricity depends on the grid's capabilities. We will only go so far in our quest for energy independence as our electric infrastructure will take us.

I am eager to engage in a discussion of the investments we need to make in our electric infrastructure and to hear the perspectives of our panel on these critical issues. Thank you, Mr. Chairman.

PREPARED STATEMENT OF HON. JIM BUNNING, U.S. SENATOR FROM KENTUCKY

Thank you Mr. Chairman and Senator Domenici for taking the time to hold today's hearing on the state of our national transmission grid.

Our electricity grid is a complex system. We must do all that we can to ensure we have a reliable transmission network that meets our growing energy demands.

With this reliability it is also important to work to keep rates affordable and not to shift the excess cost of expanding our transmission networks onto the consumer.

Back in my home state of Kentucky, we have one of the lowest utility rates in the country. At time when Kentuckians are getting hit hard in their pocketbooks because of high gas prices, it is important to me to continue to keep these rates affordable.

As we look to ways how to address overly congested areas in the country, I believe it is important to look at all technologies to improve and increase transmission.

I want to be clear—I support efforts to expand wind and solar energy where it makes economic and logistical sense. However, I am not naïve—the wind does not always blow and the sun does not always shine. And in times like these, I believe it is critical that our nation's electric grid have a backstop to ensure generation does not cease due to weather conditions.

I believe that until renewable energy can be stored at a level that meets the demands of our utility grid; our nation needs to invest in other advanced energy infrastructure—like new coal plants and nuclear plants—that meet future demand no matter the forecast.

I also believe that it is important to consider the role of state and local utilities in expanding transmission lines. We must allow them the opportunity to work out their utility issues in high use areas on their own before stepping in at the Federal level.

I look forward to questioning our witnesses today and thank the chairman for holding this hearing today.

**STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM
NEW MEXICO**

Senator DOMENICI. Thank you very much, Mr. Chairman. I believe you and I, along with a number of Senators on this committee, some who are here with us today, took a great deal of pride when we passed EPACT and to know that we had taken action with reference to one of the most serious American problems that was upon us. That was the reliability of the American grid system.

As we were in the midst of the work, we were confronted with a grid break down. As you remember we were quite boastful that we had developed a bill that would not permit that to happen again.

But we didn't say, if everything is done right as prescribed by our law. Certainly it hasn't all been done. It's slow coming.

But I think I would commend the agencies and commissions that have the authority to accomplish the goals that you just enumerated which are very important. I think they've done better than the Executive branch at fulfilling the requirements and goals that we set forth in the law. There are many things in that law that the Administration hasn't even looked at.

The people come up and ask, what are we doing about it. It's already written. It's in our bill. But nobody has asked for any money. Nobody's doing anything.

But at least the Commission, FERC and others are trying to get to this issue of reliability, cost allocation, and what we're talking more about today obviously, the issue that the distinguished Senator brings to us. He seems not to like the law we wrote. He's a wonderful, young Senator. I have great respect for him.

But if he's recommending that we weaken the power we gave to make decisions on behalf of the states where they are involved in things that are in gridlock, he'd have to wait for another Senator then, not Senator Domenici to help him.

[Laughter.]

Senator DOMENICI. But he won't have to wait very long. Somebody will be here in my place. So that will just be a little while.

I'd like to put my statement in the record, Mr. Chairman. Thank you.

[The prepared statement of Senator Domenici follows:]

PREPARED STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM
NEW MEXICO

Thank you, Mr. Chairman, for calling this oversight hearing on the state of the nation's electrical transmission grid. Today's hearing builds on the one this Committee held last month, addressing the lack of available transmission capacity to bring alternative energy resources online.

The state of our nation's electrical transmission grid is an important issue that, until recently, has often been overlooked. There is no question that our current system is overloaded. Demand has increased substantially, with home computers, plasma screen TVs, and other electronic devices. By 2030, the Energy Information Administration projects a 30% increase in U.S. electricity demand—an estimate that assumes significant efforts to improve energy efficiency and demand response.

This country faces an urgent need to build out more transmission—for reliability and security purposes, to hook up new sources of renewable energy that are often located far from load centers, and to realize the promise of plug-in hybrids.

Following the 2003 August blackout, Congress sought to address these transmission problems. With enactment of the Energy Policy Act of 2005, we called for the creation of an Electric Reliability Organization and mandatory reliability stand-

ards. We tasked FERC with issuing transmission rate incentives designed to spur transmission development. And, perhaps most importantly, we tackled the difficult issue of siting much needed interstate transmission lines.

In EAct we directed DOE to study the country's transmission constraints and designate National Interest Electric Transmission Corridors in areas of severe congestion. We also provided FERC with backstop siting authority designed to counter NIMBY opposition to interstate lines. These are significant federal authorities aimed at ensuring adequate transmission. Unfortunately, since their enactment and before they have even been fully implemented, these provisions have been attacked by numerous interest groups and even members of Congress. Both DOE and FERC now face lawsuits designed to thwart these new legal authorities.

This process has certainly been contentious. That's why I was surprised to hear from witnesses at last month's hearing that they believe that Congress did not go far enough with its EAct siting provisions. We heard witnesses ask us to give the federal government even more siting authority—perhaps along the lines of FERC's exclusive siting authority under the Natural Gas Act. Since 2000, we built over 10,000 miles of interstate gas pipelines—but just 900 miles of transmission lines.

We must do better—particularly if we want to increase our nation's use of renewable sources of energy. I want to borrow a phrase from one of our witnesses today—"you can't love renewables and hate transmission." That just about sums it up. Renewables and transmission are interdependent.

I want to thank all of our witnesses for being here today and sharing their expertise on this important issue. In particular, I want to commend our federal witnesses for all of their efforts in implementing EAct 05 and thank Joe Kelliher for interrupting his family vacation in Florida to join us today.

The CHAIRMAN. Thank you very much. Senator Casey, you're welcome to our committee. Thank you very much for coming. We look forward to your comments.

**STATEMENT OF HON. ROBERT CASEY, U.S. SENATOR
FROM PENNSYLVANIA**

Senator CASEY. Mr. Chairman, thank you very much. I want to thank you and Ranking Member Domenici for this opportunity as well as other members for allowing me this chance to present some testimony. Which I think by the way has application beyond Pennsylvania.

With respect, Senator Domenici, this is not an attack on the legislation. It's really, in total, I think a very frank assessment of the way the law has been implemented and the way Federal agencies have acted. I'll get into that in a couple of moments.

But I do appreciate the opportunity to gather information. That's part of what you're doing here today, on the National Interest Electric Transmission Corridors authorized under section 1221 of the Energy Policy Act of 2005. Senator Menendez has worked on this issue in particular with us and I appreciate his work.

I think that there's broad agreement here. There might be disagreement about some aspects of how the law has been implemented by Federal agencies. But I think there's broad agreement that affordable electricity is the cornerstone of a strong economy. We must ensure that electricity moves through the grid and is delivered to customers efficiently and reliably.

On February the 12th of this year, 14 bipartisan Senators from the Mid-Atlantic and Northeastern states sent a letter to this committee requesting oversight hearings on the transmission corridors. We sent this letter because of concerns raised in our states about the way the corridors are being implemented. We are concerned that the scope of the implementation and the potential over use of the new Federal power line siting authority, that was the principle area of concern. So it goes beyond the narrow, kind of back stop

authority that the committee intended when it drafted the provision.

Just some background on Pennsylvania. Pennsylvania is literally the power provider for the Northeast and the Mid-Atlantic. We rank second or third in the Nation for electricity generation.

We export at least 30 percent of the power we generate. We're the principle supplier of electricity to our neighboring states. States like Delaware, New Jersey and Washington DC, the District here, as well as Maryland, each import over 30 percent and in some cases up to 50 percent of their electricity. Pennsylvania provides much of their power.

We have a robust generation industry in Pennsylvania. That industry combined with our willingness to site high voltage lines make it possible for our neighboring states to avoid difficult decisions to site new power lines within their own borders. So the concern that Pennsylvanians have over the implementation of the 2005 Energy bill is not simply a not in my backyard or NIMBY issue. It goes beyond that.

One of the concerns that we have is the transmission corridors, rightfully so, I think, in our State and a lot of other States, are the subject of intense interest. Local residents who worry about the impact of the corridors on their towns have reported to State and local government. I have a compendium of petitions here, 4,511 signatures* from the people of our State and even beyond. But most of them are from Pennsylvania.

We have a chart that I think is right there, that I wanted to show you in terms of the region, all of the, kind of, almost the most of the Eastern seaboard or Northeastern part of the United States. The sections in red there, right in the middle of course is the boundary of Pennsylvania. You see all the States that are affected are red. That's the designation and I'll get into that in a little more detail.

On a national level the Mid-Atlantic corridor in the Southwest corridor includes portions of ten States and affects more than 72 million people. The word corridor sounds benign when we are looking at huge swaths of land. The majority of a State being wrapped up in what should be the narrow focus on key electricity congestion points.

The Energy Department maintains that their designation doesn't really do anything. What you're seeing there is a designation. I understand that it's not siting. It's designation.

But this designation determines the area in which the Federal Energy Regulatory Commission or FERC, as we know it, can invoke new Federal siting power. So the designation may not have anything to do with what is happening right now. But that becomes the basis for siting power as you know from the law.

At the State level, our State House of Representatives and our State Senate, along with Governor Rendell, have all voiced opposition to the transmission corridors as implemented by the Energy Department and FERC. Our reason, or one reason, I should say, is their concern by the over reaching of Federal authorities to effectively displace the States and substitute the Federal Government

*See Appendix II.

as the ultimate authority responsible for siting, siting electric transmission lines.

Another reason is the worry that the transmission corridors undermine State renewable electricity standards, greenhouse gas reduction programs and energy efficiency initiatives in terms of the way this Department of Energy has gone about the work of implementing the bill. The way the Energy Department has carried out the designation process, we don't know what will happen on siting yet. But the way they've carried out the designation process, to me, is unacceptable, the way they've done it.

In Pennsylvania we had one public meeting. One public meeting was held to inform residents about what this meant. That meeting which was held in Pittsburgh was only added to the calendar after a regional Congressional delegation sent a letter to Secretary Bodman.

I don't think there's anyone on this committee that would find it acceptable to have one public meeting when you have 75 percent of your State designated by FIAAct, by the Department of Energy. I don't think that's what the law intended. But that's the way the law has been implemented.

We had over 2,000 public comments at that time expressing concern about the designation. To the people of Pennsylvania this conveys one thing from the Federal Government, arrogance, pure and simple arrogance by a Federal Government agency. Again, I don't think that's what the 2005 law was intended to do. I don't think anyone who voted for that law intended that to happen.

In addition the Energy Department did not abide by the spirit of the 2005 Energy Act. It failed to consult with the States in conducting their congestion study. That's No. 1.

No. 2, it failed to assess and evaluate transmission needs and non-transmission alternatives to relieve congestion.

No. 3, it failed to comply with existing Federal laws that protect public lands and the environment.

There are other ways to go about this. There are non-transmission line solutions to electric congestion. The Energy Department is looking at alternative methods. Thank God, they should, at relieving congestion.

But those alternatives have not been considered on equal footing with the construction of more high voltage lines. Alternatives include, as members of this committee know, Demand Side Management, that creates incentives for customers to reduce usage during peak times, siting local generation near the demand, distributed generation conservation and efficiency. Lots of options here.

The Federal Energy Regulatory Commission, FERC, overreaching. Let me just go through that quickly. I have concerns about conflicting statements I've gotten from FERC through meetings and letters. I'm worried that for a provision that Congress intended to be rarely used to address a lack of State action on an interstate proposal, FERC has taken a very liberal view of the new power afforded to FERC pursuant to the 2005 Act.

In 2006, FERC issued final regulations that assert FERC's jurisdiction over siting decisions in circumstances where States have timely and lawfully denied approval of transmission line proposals. Not only does this assertion of authority fly in the face of the plain

language of the 2005 Act. It is also contrary to the purpose of the Act to provide a process point for the Federal Government to step in and approve or disapprove of transmission lines that are necessary to relieve specifically identified congestion where the States have not acted.

So, a law that was intended to be narrowly applied has, in my judgment been applied too broadly. I think with without taking into consideration the concerns of Pennsylvania. But also the concerns of a lot of other States.

The combination of transmission corridors that swallow our States in the broad implementation of the law by FERC are already impacting the people of Pennsylvania. Last year a power company was censured by the Pennsylvania Consumer Advocate. Among the complaints from families who were affected were that the contractors visited their properties and told them they could fight it.

But that the company would just wait it out for a year. Then the Federal Government would take over. The same kind of arrogance at the contractor level and this isn't the Energy Department directly.

But ultimately you have the same kind of arrogance which it could be summed up simply in the phrase, just get used to it. These are coming and you've got to get used to it. If you step in our way, we're going to have a Federal Government agency run you over. That's the message that the people of Pennsylvania have gotten.

One thing about the people of our State is we're fighters. We like a good fight. We like to avoid them, but we also like a good fight.

We're ready to fight on this. I think a lot of other States are as well. If that's the arrogance the Energy Department is going to display in our State, we're going to fight them, tooth and nail, every step of the way.

I hope the committee will take all of these concerns into account and work to address what I believe to be a faulty implementation of the law of what should have been a focused and narrow provision of the law. I ask the committee as you consider solutions, I urge you to refine the law to require:

No. 1, appropriate public meetings in affected areas.

No. 2, if the committee would address the impact of a proposed project under the transmission corridors could have on State renewable energy and greenhouse gas programs.

No. 3, I'd ask the committee to ensure that non- transmission alternatives are part of the solution.

But I thank you for the hearing today. I thank you for this opportunity especially at the end of a busy work period before we head back to our States. I stand ready to assist you in any way, based upon the experience we've had in Pennsylvania to make sure that transmission corridors under the 2005 Energy Act work for the people of Pennsylvania, for the people of the Northeastern corner of the United States and work for all America.

Thank you, Mr. Chairman.

[The prepared statement of Senator Casey follows:]

PREPARED STATEMENT OF HON. ROBERT P. CASEY, JR., U.S. SENATOR
FROM PENNSYLVANIA

First, I want to thank Chairman Bingaman and Ranking Member Domenici for holding this morning's hearing on transmission issues, including new provisions of law under the 2005 Energy Policy Act. I appreciate the Committee's willingness to gather information specifically on the National Interest Electric Transmission Corridors authorized under Section 1221 of the Energy Policy Act of 2005. I also want to recognize Senator Menendez for his leadership and thank him for his continued work on this issue.

Affordable electricity is a cornerstone for a strong economy, and I agree that we must ensure that electricity moves through the grid and is delivered to customers efficiently and reliably.

On February 12th, fourteen bipartisan senators from the Mid-Atlantic and Northeast sent a letter to this Committee requesting oversight hearings on the transmission corridors because concerns have been raised in our states about the way those corridors are being implemented. I am concerned that the scope of the implementation and the potential over-use of the new federal power line siting authority go beyond the narrow back-stop authority that the Committee intended when it crafted the provision.

Pennsylvania is the power provider for the Northeast and Mid-Atlantic and we annually rank second or third in the nation for electricity generation. We export at least 30% of the power we generate and are the principle supplier of electricity to our neighboring states. Delaware, New Jersey, Washington D.C., and Maryland each import over 20% (up to 50% in some cases) of their electricity and Pennsylvania provides much of that power. Pennsylvania's robust generation industry combined with our willingness to site high-voltage lines so that reliability is preserved throughout the region have made it possible for our neighboring states to avoid difficult decisions to site new power plants in their own borders. So the concern that Pennsylvanians have over the implementation of the 2005 energy bill is not simply a NIMBY issue.

In Pennsylvania, the transmission corridors are the focus of intense interest from local residents who are worried about the impact of the corridors on their towns to officials in state and local government. These concerns are evident from the over 4,500 people who signed a petition on my website earlier this year. One glance at the Energy Department's corridor designation map and it's easy to see why everyone is worried. The Mid-Atlantic Corridor covers about 75% of Pennsylvania. On a national level the Mid-Atlantic Corridor and the Southwest Corridor includes portions of 10 states and affects more than 72 million people.

The word corridor sounds benign when what we are looking at are huge swaths of land and the majority of a state being wrapped up in what should be a very narrow focus on key electric congestion points. I know that the Energy Department maintains that their designation doesn't really "do" anything. But in as much as the corridors determine the area in which the Federal Energy Regulatory Commission (FERC) can invoke the new federal siting power, the designation is very significant.

At the state level, the Pennsylvania State House and State Senate, along with Governor Rendell have all voiced their opposition to the transmission corridors as they are being implemented by the Energy Department and FERC. One reason is the concern of over-reaching by these federal authorities to effectively displace the states and substitute the federal government as the ultimate authority responsible for siting electric transmission lines. Another reason is the worry that, as implemented, the transmission corridors undermine state renewable electricity standards, greenhouse gas reduction programs, and energy efficiency initiatives by making it virtually impossible for new, important and rapidly expanding power sources to compete with highly-moveable established power generation.

The way the Energy Department carried out its designation process was unacceptable. In Pennsylvania, only one public meeting was held to inform residents of what the transmission corridor does and does not do. And that meeting, which was held in Pittsburgh, was only added to the calendar after the regional Congressional delegation sent a letter to Secretary Bodman. I don't think that this is the way the federal government ought to flex its muscle over states and towns. The fact that over 2,000 public comments expressing concerns over the draft corridor designation were sent to the Energy Department, and yet the final designation was virtually unchanged, should concern all of us. To the people of Pennsylvania, these actions conveyed a level of arrogance on the part of the federal government that undermines confidence in government.

In addition, I don't think that the Energy Department abided by the spirit of the 2005 energy act in failing to consult with the states in conducting their congestion

study, failing to assess and evaluate transmission needs and non-transmission alternatives to relieve congestion, and failing to comply with existing federal laws that protect public lands and the environment.

I want to talk a little about the idea of non-transmission line solutions to electric congestion. While the Energy Department is looking at alternative methods of relieving congestion these alternatives have not been considered on equal footing as the construction of more high-voltage lines. Alternatives like Demand Side Management that create incentives for customers to reduce usage during peak demand times, siting local generation near the demand, distributed generation, conservation, and efficiency all should be considered.

On the FERC side of the implementation process, I have concerns about conflicting statements that I have gotten from FERC through meetings and letters. I also am worried that for a provision that Congress intended to be rarely used to address a lack of state action on an interstate proposal, FERC has taken a very liberal view of the new power afforded them. In 2006, FERC issued final regulations that assert FERC's jurisdiction over siting decisions in circumstances where states have timely and lawfully denied approval of transmission line proposals. Not only does this assertion of jurisdiction fly in the face of the plain language of the 2005 Energy Policy Act it is also contrary to the purpose of the Act, which was to provide a process point for the federal government to step in and approve or disapprove of transmission lines that are necessary to relieve specifically identified congestion where the states have not acted.

The combination of transmission corridors that swallow our states and the broad implementation of the law by FERC are already impacting Pennsylvanians. Last year a power company was censured by the Pennsylvania Consumer Advocate. Among the complaints from the families who were affected, were that contactors visited their properties and told them that they could fight it now but that the company would just wait it out for a year and then the federal government would take over.

I hope that the Committee will take all of these concerns into account and work to address what I believe to be a faulty implementation of what should have been a focused and narrow provision of law. As the Committee considers solutions, I urge you to refine the law to require appropriate public meetings in affected areas, address the impact a proposed project under the National Interest Electric Transmission Corridors could have on state renewable energy and greenhouse gas programs, and ensure that non-transmission alternatives are part of the solution.

Again, thank you for holding today's hearing. I appreciate your time during this last busy week before we return to our states for the next month. I stand ready to assist you in any way that I can in order to make the transmission corridors under the 2005 energy act work for the people of Pennsylvania and all of America.

Thank you.

The CHAIRMAN. Thank you very much, Senator Casey. I think you're comments help us to understand the particular problems that have arisen under this law. We need to understand those, and we need to determine whether additional action by this committee or this Congress is required in order to address them.

We do have witnesses here today from both the Department of Energy and FERC, as well as many others who will, I'm sure, get into some of these same issues and give us their views as well. So thank you very much for being here. Let me just ask if Senator Domenici had any questions. I did not have any questions.

Senator DOMENICI. Mr. Chairman, first I want to thank the Senator and hope he understands that my comments had intended no offense. In fact—

Senator CASEY. I know that.

Senator DOMENICI. I have a great affinity for the Senator. He knows that, too.

Senator CASEY. I share that for you.

Senator DOMENICI. I wanted to just say, Senator, you should know that when we got to this issue of the grid. What we were going to do about the fact that we were hearing, almost on a regular basis, about the great fear that was attendant our grid and

how it was explained almost on a regular basis that we did not have a reliable grid, America. That it was apt to go out at any time.

Then we had that Northeastern, wherever it was. Larry. I don't remember.

We had a grid failure after our law passed. We said we're not going to have those anymore. We thought that was because things would happen in the reliability section and in the section of transmission corridors where there was blockage.

You couldn't get anywhere because there was bickering which went higher than bickering. But I'll just use that word. It got to the point where you couldn't get a decision. That's what we were talking about.

We said, ok, we will change our philosophy. Most people were on our side. We will go ahead and have ultimately what could be a Federal condemnation.

We did not apologize for it because we thought it would only be used when a situation of the type that I described was there. Findings would have to be made and it would not be an everyday occasion. I agree with you, it would not be an everyday way of doing business. It would rather be a once in a while type of situation.

But nonetheless, we surely didn't think every single corridor construction would be done with everybody agreeing. We thought there would be some. Since we had heard about so many where they were butting heads.

So I want you to understand that we did intend this to be a tough new section of the law. You are not telling us that it shouldn't be. You're complaining about the way it's implemented as I hear you.

I listened carefully. I hope we can get to the bottom of at least the arrogance which you seem to repeat a couple of times and think really exists. There should be no arrogance. I assure you we didn't intend that.

So thank you very much.

Senator CASEY. Can I just respond briefly, Senator? Thank you for walking us through that history. Because it's important to be able to, I think, accommodate the obvious national interest in having a grid and having the kind of reliability that you and others worked so hard to achieve.

I think we can accommodate that national interest with the process that we undertake. I think in Pennsylvania one of the problems is that we have, because that section of the law was designed for, I think, situations where a State is not acting or utility commission in a State has been kind of dragging their feet. We have a tradition in our State where we've got a utility commission which is active and has acted in a responsible way.

I think just the way it happened here where you have no public hearing and then most of the State, as you can see by the chart. We took it down, but most of the State is designated. That seemed like it was being imposed upon the State. That's where the complaint is.

So I think we can accommodate both interests. I think it's really just a question of how it's implemented. Some of it may not be statutory.

I would say I've recommended some statutory changes. But some of it's the personality of the Secretary and his or her team. Some of it is the way that people on the ground operate.

But I mean at a minimum have a couple meetings in each, you know, media market. You've got a State of six media markets, but in this instance I think we can work together to accommodate those interests.

Senator DOMENICI. Thank you.

The CHAIRMAN. I believe there were one or two others who wanted to make comments here before we—

Senator CASEY. Sure.

The CHAIRMAN [continuing]. Move to the next panel. Senator Craig and Senator Cantwell both indicated they did. Go ahead.

Senator CRAIG. Bob, thank you very much.

Senator CASEY. Thank you.

Senator CRAIG. I too, wanted to express a similar frustration that I had at the time we crafted this provision and someone who strongly believes in States' rights. It became obvious to me that I had to give a little. I had to give a little because there were States who were simply not in my backyard blocking the ability for us to create national systems.

We do have national systems. They must be that. They must, and in so doing, they have to be reliable.

The only way to do that was to take us from what I'll never forget. I oftentimes repeat it. In the course of the hearings we held as we were shaping the fundamental structure of EPACT 2005 was someone talking about transmission systems in our country as a bunch of country roads that every so often kind of came together, that there had never been a grand, uniform design.

You said it. Pennsylvania kind of grew up and grew out because it found itself a supplier of a region not a State. We saw that happening all over the Nation. There was not the connectivity that obviously we're going to have to have to have reliability. So we gave authority that I was very hesitant to give.

Now I can't speak for what went on in your State. You're the spokesman of that and you've done it well. If there is a lack of the kind of participation we expected let's not base that on personalities.

Let's make sure that's institutionalized. Because you and I both know personalities will come and go, not only on this Dias, but downtown. It's very important that we institutionalize it and that the citizen gets what they expect.

But no citizen in Pennsylvania or any surrounding State ought to have a right to say no, period. I'm going to stop a national movement or a national necessity. Here we are in the grips of a fundamental energy debate in our country.

Our consumers are telling us one thing. We're resisting institutionally here in Congress at the moment because of our historical past. That will change in time.

It changed with the Environmental Policy Act or the Energy Policy Act of 2005. Fundamental sweeping changes that were products—that were changes from historic positions of a past time. I'm a perfect example.

Out West we don't worry about the neighboring State. We worry about the neighboring Federal expanse and the bureaucracy of the Federal Government being our problem when we want to move a transmission system or corridor and all of the little NIMBYisms within the structure of Federal policy. You think you've got problems in States like Pennsylvania and Delaware and neighboring States. Come out West and try to figure out how to cross Federal land. It's a whole new game.

But anyway, thank you. I'm glad the chairman is holding this hearing. Anytime we write new law and bring it into power and policy we ought to be reviewing it, working with the agencies and making sure that it follows through with the congressional intent that was clearly there. Thank you.

The CHAIRMAN. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman. Senator Casey, I know that the Carnegie Mellon Electricity Industry Center is at the University there. They're obviously doing a lot of thinking on generation and how we move forward on all sorts of new technologies and solutions; everything from wireless transmission to how we can be more sufficiently green in this area.

Do you think that they could be helpful in trying to come up with options for how to make this process move more smoothly to address some of these local concerns?

Senator CASEY. Oh, I think so. I think that, like a lot of States, we're all proud of our institutions of higher education. Carnegie Mellon is one of the leading lights.

I think in terms of some of the research that you point to and also I think the State government has actually done a lot in this area. The departing Secretary of Environmental Protection, Kathy McGintee, Katie McGintee, worked in the Federal Government, knows a great deal about these issues about alternatives and using other options here. I think that some of this problem we've had with the Federal Government is easily correctable.

It's as simple as saying that before you designate this many counties out of our 67 counties, 75 percent of them, that you're going to have more public input. I think that we can correct that. Now beyond that it's probably more complicated.

But we could probably, I think it has been stated earlier, institutionalize a process where you have to have more public input. But I think Carnegie Mellon and institutions like that can help us both on the policy and the research, but also on the way the law gets implemented.

Senator CANTWELL. Mr. Chairman, I certainly appreciate the point that the Senator is making. But I do think that transmission technology is continuing to change. We certainly want to modernize the grid in every way possible because it's going to be a key element of our efficiency and will drive greater fuel savings in the long run.

Maybe we can hold a hearing in the future, I know you've been doing a lot in this area, about how some of those technology solutions can help us on transmission siting issues. I know there's been some instances with TVA where we had fuel cell technology used for transmission capacity.

I know we in the Northwest look at this issue because we just had a major storm come through and knock out all the BPA transmission capacity. Chances are the 150-mile-an-hour winds will devastate us again sometime, if not in this decade the next one. So I think looking at all these tools to help us on new transmission technology is a good idea.

Senator CORKER. Mr. Chairman, may I ask a brief question?

The CHAIRMAN. Yes, certainly.

Senator CORKER. I know it's seldom we have a Senator come here that we actually ask a lot of questions of and we're glad that Senator Casey is here. You mentioned something that I found interesting in your testimony. You mentioned that what we were doing was actually hurting renewable energy.

Senator CASEY. The—

Senator CORKER. We've had T. Boone Pickens come before our committee here. Obviously he wants us to build a magnificent transmission grid around our country to utilize renewable energy, wants us to make significant investments. I think along with that give even more powers, if you will, to the Federal Government to make sure the grid is in place or get out of the way and let them do it.

I just wondered when you said that what you were referring to. I found it very interesting.

Senator CASEY. There's a concern that's been raised in our State, I'm sure there might be others. But I know in our State that the way this is being implemented could undermine those efforts that you have kind of, a narrow focus on the traditional towers and the power that can come from that. Obviously, I mean, I think it stands to reason that that concern might be valid because that may be the easier way to go because we're used to doing that.

We're used to putting up towers and used to having these transmission lines when there are other alternatives. We know from our historic debates, but also our recent debates that's it's sometimes easier to fall under the old way of doing things instead of pursuing other options. I just want to make sure that those other alternatives get the kind of attention and review and, hopefully, investment that will give us other options that, frankly, may not raise as much concern within communities.

I think if you give communities more options I think they're less—assuming you give them public hearings and input. I think if you give them other options you're more likely to have community support for any kind of new technology you can bring to bear on the question of the grid and reliability.

Senator CORKER. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. Senator Casey, thank you very much. I think you've focused our attention on many of the issues we're going to be trying to understand this morning. This is very helpful.

Again, thanks for urging us to have this hearing.

Senator CASEY. Thank you very much, Mr. Chairman.

The CHAIRMAN. We have two panels this morning. Let me just advise members, we have eight witnesses so it's going to be a full hearing. We want to hear from all of them.

If the first panel would come forward.

Honorable Joseph Kelliher, who is the chairman of FERC, the Federal Energy Regulatory Commission.

Honorable Kevin Kolevar, who is the Assistant Secretary for Electricity Delivery and Energy Reliability in the Department of Energy.

The third witness is Honorable Marsha Smith. I know Senator Craig wished to make a short statement of introduction for Commissioner Smith. So why don't you go ahead and do that, Senator Craig, at this time.

Senator CRAIG. Thank you very much, Mr. Chairman. We're extremely pleased to have Marsha Smith from Idaho here to testify today for the National Association of Regulatory Utility Commissioners. Marsha, as chairman of the Idaho PUC, has been a very clear voice for reason and wise decisionmaking at our commission and has been a national spokesperson as we've tried to work our way through this myriad of transmission problems that our country has and how we regionalize it.

Do we regionalize it? Who owns it? Who doesn't own it? How do we build it?

All of those kinds of things that are clearly in the public forum today, so extremely pleased that Marsha is here. Thank you for being here. To all the rest of you, welcome.

The CHAIRMAN. Alright. Why don't we start with Chairman Kelliher and hear from him and then Secretary Kolevar and then Commissioner Smith. After all three of you have testified, we will have some questions.

We'll put your full statements in the record and if you could just make the main points you think we need to understand, we would greatly appreciate it.

Chairman Kelliher.

STATEMENT OF JOSEPH T. KELLIHER, CHAIRMAN, FEDERAL ENERGY REGULATORY COMMISSION

Mr. KELLIHER. Thank you, Chairman Bingaman and Senator Domenici and members of the committee. I want to express my thanks for the opportunity to discuss the state of the power grid and FERC initiatives in the wake of the Energy Policy Act 2005. This is probably my last opportunity to appear before the committee before the retirement of Senator Craig and Senator Domenici.

I really just want to commend your service, particularly in the area of energy policy formation. The Energy Policy Act of 2005 is the most important Federal energy law, at least in the area that FERC is concerned with, since the 1930s. I wanted to commend both of you for your huge role in developing sound energy policy.

Particularly thank Senator Craig for his leadership on hydro licensing, an area very important to the Pacific Northwest. I think that the provisions that you added to the Energy Policy Act will make improvements to a licensing process that I consider a lawyer's dream and an administrator's nightmare.

But I want to thank Senator Domenici for his leadership in the Energy Policy Act. It was a hugely important law. I think you leave a tremendous legacy in the area of energy policy development.

You're a very skilled legislator. I'm glad you applied your talents to the area of FERC law.

Senator DOMENICI. Thank you.

Mr. KELLIHER. But I want to review the major points of my testimony. But I want to use different words than in my written statement. So if you're trying to track my written statement you'll be frustrated.

But I think you have to start with a discussion really of the grid, the nature of the grid, because otherwise the rationale and benefit of FERC policy will probably remain elusive. The grid is the interstate highway system for the wholesale power market. The robust grid is necessary to assure reliability and support competitive markets.

The United States does not have a national grid. It has three large regional grids or interconnections and there are sub regions in some of these regional grids. The U.S. does not, manifestly, does not have 50 State power grids. That is a significant change from the 1930s when the principal Federal electricity law was written when there truly was not an interstate grid, where electricity delivery was local, not interstate.

But the grid is not only interstate, it's international with some of the regional grids in the U.S. fully interconnected with Canada and parts of Mexico. The U.S. power grid is the largest in the world, encompassing about 200,000 miles. But the grid ownership itself is highly fractured in contrast to most countries.

Most countries might have one or three or five owners of the grid. In the United States we have more than 500 owners of the grid. I think that disaggregated ownership greatly complicates grid planning, investment and operation. I think, frankly, it is a major weakness, perhaps the principal weakness of the U.S. electricity market. There's great variety in the nature of that ownership.

But FERC policy with respect to transmission, we have three overarching goals, to protect reliability of the grid, to assure open and non-discriminatory access to the grid and then to encourage development of a robust power grid. There's certainly a relationship among these goals. Congress recognized the importance of these three goals, expressed them implicitly in the Energy Policy Act 2005 and gave FERC additional authority in all three areas.

Since the Energy Policy Act of 2005, FERC has pursued a series of initiatives to achieve these three broad policy goals, relying on both pre-existing and new regulatory authority. Specifically, we moved quickly to implement the new reliability authority by certifying the electric reliability organization, by setting reliability standards, by approving delegation agreements with regional entities and by requiring improvements in reliability standards and approved standards and also by developing enforcement of reliability. We've also established rules governing the very limited Federal siting authority.

We've crafted new rate policies to encourage investment, relying in part on Energy Policy Act authority. We've revisited interconnection cost allocation policies to encourage the development of new generation, especially renewable energy. We've reformed landmark open access rules to achieve more perfect access to the grid and, among other changes, to improve regional transmission planning.

We've also made a number of regional cost allocation decisions in certain regions of the country.

Now there's a lot to say in each of these areas and my time is limited. So I'm going to touch on only a few of the areas focusing on the purpose and the goals of FERC policies rather than the details. But I invite questions from Senators in all of these areas.

With respect to reliability, FERC met every deadline set by Congress with respect to reliability. Put reliability standards in place a full year before contemplated in the Energy Policy Act. Last summer was the first summer where the grid was protected by mandatory and enforceable reliability standards.

But one of the most important decisions was a threshold decision to define what exactly should FERC's role be in the area of reliability and there frankly, hasn't been that much attention to that threshold decision. Now under one vision FERC could have assumed the role of the court of appeals. That all we would have done is hear appeals of reliability enforcement decisions made at the regional level or by the ERO.

But the alternative vision was a more active role focused on steady improvement to reliability, to strengthen reliability standards over time, to try to promote excellence in grid operations for FERC to assume an active role in enforcement and to work closely with the ERO and regional entities. We ultimately concluded that that more active role was necessary and more consistent with Congressional intent. I think the process, the reliability process, established in the Energy Policy Act has worked well with one exception, namely cyber security.

I think current authority is inadequate for the Federal Government, for FERC, to guard, protect the grid against cyber threats and that is one area where I urge Congress to pass legislation to give us additional authority to guard the grid against cyber threats. I commend Chairman Bingaman for recognizing that need.

Now with respect to siting I'm just going to focus on FERC's role because I think the Assistant Secretary Kolevar will discuss DOE's role. Again the nature of the grid, it's interstate in nature. We don't have 50 State grids.

But the laws that govern transmission siting in this country are, frankly, inconsistent with the nature of the grid. They reflect the past, the 1930s, rather than the current reality of the grid. The result is that the U.S. has a weaker grid than it needs to assure reliability, support competitive markets and meet the climate change challenge.

Senator DOMENICI. Sir, would you back up a minute?

Mr. KELLIHER. Yes, sir.

Senator DOMENICI. and a half?

Mr. KELLIHER. Yes, sir.

Senator DOMENICI. Go back about a minute in your testimony please. Repeat about a minute of your back testimony because I didn't get it.

Mr. KELLIHER. The reliability portions?

Senator DOMENICI. Just right at the end there about a minute back.

The CHAIRMAN. Cyber?

Mr. KELLIHER. On cyber security?

Senator DOMENICI. Right after cyber.

Mr. KELLIHER. Ok. With respect to siting?

Senator DOMENICI. Yes.

Mr. KELLIHER. Yes, sir. That on siting, I think it's important to recognize the nature of the grid because I think that's critical to developing a view on siting. How transmission should be sited in this country?

In the 1930s there was no interstate power grid. Electricity delivery was local. So for that reason because of the reality of the grid at the time, the law made sense in the 1930s. It provided for State siting of transmission facilities.

Now we have a grid that is interstate and international. But I think State siting of—these are essentially machines. You're talking about large regional machines. State siting of large regional machines that extend across national borders in some cases these are North American machines, is inapposite. It is inconsistent with the reality of the grid.

Now that is the exact same circumstance that occurred with gas pipelines. The Natural Gas Act of 1938 provided for State siting of natural gas pipelines. Congress in 1947 concluded that that approach was fundamentally flawed because the nature of the pipeline network was interstate. It was not local.

So therefore Federal siting was necessary. Congress in 1947 amended the Gas Act, provided for exclusive and preemptive Federal siting authority for pipelines. That process has worked very well for 60 years.

Congress reached a similar conclusion in 2005. You concluded that there was a problem with the transmission siting process. Your solution was very different. It was adding a supplemental or secondary Federal process to the back end of a State process.

So you reached a different conclusion. You reached a similar conclusion to Congress in 1947. But your action was very different.

If you were to take up Senator Casey's invitation to revisit the law governing transmission siting and I might encourage you to do so. I would propose a very contrary result, that you look at the gas pipeline model and adopt that for transmission siting.

I do so with complete respect toward State officials. I think it's important to look at what's the duty of a Federal official or a State official. If I were a State official, I might well reject and vote against a transmission project that benefits an entire region or perhaps the entire western part of North America because my duty is not to a region. It's not toward western North America. It's to one State.

I don't criticize State officials when they reject a transmission project because they believe they're exercising their duty. But their duty is limited to one State, citizens of one State.

Let me just make a point about—and I realize I've extended my time and I regret that. But reflect the difference between how these two processes work. Earlier this week FERC approved a certificate for a natural gas pipeline, the Mid-Continent pipeline. That pipeline is more than 500 miles long. It crosses five States. FERC approved it in nine and a half months.

Recently FERC approved the REX West pipeline. That pipeline crosses five States. It's more than 700 miles long. FERC approved it in 11 months.

I went to the commemoration of the Jackson's Ferry line which is a major AEP line. It's the largest, to my understanding, the largest transmission line added in recent years. That line is 90 miles long, crosses 2 States. It took 16 years to site and approve that project.

I agree with the conclusion that the committee reached—Congress reached 3 years ago. But I think the action you took was at best, the next best alternative. I think I'm committed and DOE's committed to making the new law work as well as possible. But I don't think it's going to be very close to the natural gas pipeline model. It will be much closer to the status quo ante, the status quo that the committee, Congress, found unsatisfactory.

Now, Senator Casey, yes. Senator Casey made a point about overuse of Federal authority. I just want to be very clear that the committee should appreciate that we've had a grand total of zero applications for transmission siting under the Energy Policy Act. So I don't think we could have used our authority less than that.

I think it could not have been used more sparingly. But we have had one pre-filing request, a request that's strongly supported by the State officials in California regarding a line from Arizona to California.

Investment—and I realize I extended but I'll try to speak very briefly on investment. Then wrap it up.

We are now coming out of a long period of sustained underinvestment in the grid that goes back to the 1970s. Congress recognized that problem in the Energy Policy Act 2005. Because you directed FERC to undertake a rulemaking whose purpose was to secure greater grid investment through incentives, through rate incentives.

We did exactly that. We approved a rule that was adopted by unanimous vote of the Commission. In my view that rule was fully consistent with the statute and with Congressional intent.

Now since the rule was adopted, FERC has received 30 applications for rate incentives involving thousands of miles of new transmission, thousands of megawatts and in almost every region of the country. These projects are the kinds of projects that haven't been seen in a quarter century. Now we have approved a good number of these incentive orders. We've also rejected those that were not consistent with our rule. A number of these applications remain pending.

But among the ones that we've approved are major projects. Major backbone projects that will provide broad, regional benefits. Some proposals that nearly double the transmission investment of individual utilities and others that are designed clearly to increase fuel diversity and deliver renewable energy from certain regions of the country.

Now I would have to say we're on the right track on grid investment. The level of grid investment has doubled in recent years. But I frankly don't think that we're at the levels that we need to assure reliability, support competitive markets and meet the climate change challenge.

But I do want to emphasize in the discussion about investment, it's important to bear in mind what a small share transmission accounts for the retail bill. Transmission accounts on average something like seven cents on the dollar. So I think it's a small price to pay because if you improve the grid. You improve your access to the 85 cents or more of that dollar that is accounted for by the commodity of electricity.

If you spend a little bit more in transmission you improve your access to lower cost electricity. The consumer actually is better off.

We've pursued other initiatives on open access, on regional cost allocation and on interconnection policy. But I will just refer you to my written testimony in those areas.

Conclude that I think the Commission has made a lot of progress in recent years, over the past 3 years. I think the grid now is stronger than it was then. We're on the right track on investment.

We have more perfect open access to the grid. I think we're in a better position to meet reliability challenges than we were 3 years ago. I want to thank the committee for giving us the authority and the confidence you expressed 3 years ago. We do recognize that we have a lot more work in front of us at the Commission. But I thank you for the hearing today.

[The prepared statement of Mr. Kelliher follows:]

PREPARED STATEMENT OF JOSEPH T. KELLIHER, CHAIRMAN, FEDERAL ENERGY REGULATORY COMMISSION

INTRODUCTION

Mr. Chairman and members of the Committee, thank you for the opportunity to speak here today. My testimony addresses key initiatives and policies of the Federal Energy Regulatory Commission (FERC or the Commission) designed to foster a secure, robust, and reliable transmission grid, and non-discriminatory access to that grid, to support our Nation's electric supply needs. The additional authorities and directives Congress gave the Commission in the Energy Policy Act of 2005 (EPAct 2005) have been particularly important in the Commission's efforts and therefore my testimony emphasizes our implementation of the transmission-related provisions of EPAct 2005.

Any discussion of the transmission grid should start with an understanding of the nature of the U.S. transmission system. The transmission grid is the interstate highway system for wholesale power markets, and a robust grid is necessary to assure reliability and support competitive markets. The United States does not have a national grid, but a series of large regional power grids. The grid no longer consists of a multitude of local systems, as was the case in the 1930s when the principal federal electricity law, the Federal Power Act, was written. Rather, interconnections among local utilities have shaped the U.S. transmission grid into three major interconnections—the Eastern Interconnection, the Western Interconnection, and the Electric Reliability Council of Texas. Moreover, some of these regional grids are also international, fully interconnected with Canada and part of Mexico. In a very real sense, some of the regional grids are North American. The nature of the transmission grid has changed remarkably over time, and the Commission is increasingly confronted with transmission issues that can involve multiple states and must be considered from a multi-state, interconnection-wide, or North American perspective.

The United States has the largest transmission system in the world, extending across about 200,000 miles. At the same time, ownership of the U.S. power grid is heavily fractured. In most countries, transmission ownership is consolidated; in the U.S. it is highly disaggregated, with more than 500 owners. There is also great variety in the nature of these owners, which include investor-owned utilities, government utilities operated by federal, state, and municipal agencies, rural electric cooperatives, and transmission companies (or "transcos"). In my view, the disaggregated ownership of the grid greatly complicates grid planning, investment, and operation.

With respect to transmission policy, the Commission has three overarching goals: first, to protect the reliability of the bulk power system; second, to assure open and nondiscriminatory access to the transmission grid, the interstate highway system for wholesale power sales; and, third, to encourage development of a robust transmission grid. There is a relationship among these goals. It is not enough to have open access to the grid—the grid itself must be robust enough to assure reliability and support competitive wholesale power markets. In recognition of the national importance of a robust transmission grid, EPAct 2005 gave the Commission significant new regulatory authority to protect reliability, assure open and nondiscriminatory access, and encourage development of a stronger grid. The Commission has pursued a number of initiatives designed to achieve these overarching policy goals, relying on both new regulatory powers granted by Congress and pre-existing authority. The Commission moved quickly to implement its new authority to protect the reliability of the bulk power system and establish rules to govern use of its limited authority to site transmission facilities. In addition, the Commission crafted new rate policies to encourage greater grid investment, relying in part on new EPAct 2005 authority. The Commission also revisited interconnection cost policy to encourage the development of new generation, reformed the landmark open access transmission tariff, required regional transmission planning, and made important decisions regarding regional allocation of transmission costs.

RELIABILITY OF THE BULK POWER SYSTEM

EPAct 2005 gave the Commission a new responsibility to oversee mandatory, enforceable reliability standards for the bulk power system (excluding Alaska and Hawaii). This authority is in section 215 of the Federal Power Act, which authorizes the Commission to certify an Electric Reliability Organization (ERO). The ERO is responsible for proposing, for Commission review and approval, standards to help protect and improve the reliability of the bulk power system. The ERO may delegate certain responsibilities to “Regional Entities,” subject to Commission approval.

The reliability standards apply to the users, owners and operators of the bulk power system, and become mandatory only upon Commission approval. The Commission may approve proposed reliability standards or modifications to previously approved standards if it finds them “just, reasonable, not unduly discriminatory or preferential, and in the public interest.” If the Commission disapproves a proposed standard or modification, the Commission must remand it for further consideration. The Commission, upon its own motion or upon complaint, may direct the ERO to submit a proposed standard or modification on a specific matter.

The ERO is authorized to impose, after notice and opportunity for a hearing, penalties for violations of the reliability standards, subject to Commission review and approval.

The Commission also may initiate investigations on its own motion. The Commission has implemented section 215 diligently. Within 180 days of EPAct 2005’s enactment, the Commission adopted rules governing the reliability program. In the summer of 2006, it approved the North American Electric Reliability Corporation (NERC) as the ERO. In March 2007, the Commission approved the first set of mandatory, enforceable reliability standards. In April 2007, it approved eight regional delegation agreements to provide for development of new or modified standards and enforcement of approved standards by Regional Entities.

Earlier this month, the Commission acted on the first set of penalty determinations submitted by NERC to the Commission. The Commission decided that, unless an applicant sought review of the proposed determinations, the Commission would allow these 37 determinations to be affirmed by operation of law, without further Commission action. None of the applicants sought Commission review. The Commission also issued guidance to the ERO on the content of future notices of penalty submitted to the Commission. Also this month, the Commission, for the first time, approved modifications to strengthen previously-approved reliability standards. The Commission is committed to the continued development and steady improvement of the reliability standards over time.

While section 215 is an adequate tool for protecting the bulk power system against most reliability threats, cyber security threats are different. Cyber security threats may be posed by foreign nations or others intent on undermining our Nation through its electric grid. Cyber security threats stand in stark contrast to past causes of regional blackouts and reliability failures, such as vegetation management and relay maintenance. Given the national security risk of cyber security threats, the Commission may need to act quickly to protect the bulk power system, to act in a manner that goes beyond the existing standards development process, and to protect certain information from public disclosure. Our legal authority is inadequate

for such action. Accordingly, the Congress should enact new legislation on cyber security threats.

TRANSMISSION SITING

Although FERC has authority to establish the rates, terms, and conditions associated with transmission service in interstate commerce, the primary authority for siting transmission lines lies with the individual states. However, transmission siting is increasingly becoming a regional issue involving multiple states. Congress recognized this in EAct 2005. Section 1221 of EAct 2005 added a new section 216 to the Federal Power Act, providing for federal siting of interstate electric transmission facilities under certain circumstances. However, when Congress enacted this change it did not provide for exclusive federal transmission siting. States retain primary jurisdiction to site transmission facilities, and federal transmission siting effectively supplements a state siting regime. Section 216 requires the Secretary of the Department of Energy (DOE) to study electric transmission congestion and to designate, as a national interest electric transmission corridor, any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers.

Section 216(b) authorizes the Commission, under certain circumstances, to issue permits to construct or modify electric transmission facilities within a national interest electric transmission corridor. In June 2006, the Commission proposed regulations to implement filing requirements and procedures for entities seeking to construct electric transmission facilities. In November 2006, after considering input from numerous commenters, the Commission adopted final regulations.

The Commission's regulations provide for a pre-filing process. During pre-filing, the Commission will seek maximum participation from all stakeholders, including states and affected landowners, encouraging them to present their views and recommendations on the need for and impact of the facilities in this early stage of the process.

During pre-filing, the Commission will commence the coordination of the processing of all other federal authorizations which would be needed to construct the proposed facilities, as well as state authorizations to the extent that the states choose to participate in the Commission's process. During pre-filing, the Commission also will start its environmental review of the proposed project as required by the National Environmental Policy Act. Once the Commission determines that there is sufficient information available to enable it to process an application for a proposed project, the applicant may file an application for a permit. Once the application is filed, the Commission has one year to act on the applicant's request.

In response to concerns raised by some states regarding difficulties inherent in overlapping state and Commission proceedings, the Commission decided that it would not commence pre-filing on a proposed project until the states have had one full year to consider a siting application without there being any concurrent Commission process. Once the year is complete, the applicant may seek to commence pre-filing with the Commission. Neither the commencement of pre-filing nor a formal siting application at the Commission has the effect of interrupting or terminating state siting proceedings. If a state approves a siting request after initiation of pre-filing or a formal application, the Commission may terminate its proceeding.

Section 216 authorizes the Commission to site facilities if a state withholds approval of a project for more than one year. The Commission interpreted this provision to include instances where a state has denied a proposed project. This issue is currently on appeal in the United State Court of Appeals for the Fourth Circuit.

In October 2007, DOE issued an order designating two national interest electric transmission corridors. The Mid-Atlantic Area National Corridor includes portions of Delaware, Maryland, New Jersey, New York, Ohio, Pennsylvania, Virginia, West Virginia, and Washington, DC. The Southwest Area National Corridor includes portions of southern California and western Arizona.

Commission staff currently is working on its first transmission siting project. Southern California Edison Company (SCE) has proposed to construct its Devers-Palo Verde No. 2 Project (DPV2) from Arizona to California within the Southwest Area National Corridor. In January 2007, the California Public Utilities Commission approved SCE's request to construct the California portion of DPV2. In May 2006, SCE filed an application to construct the Arizona portion with the Arizona State Siting Committee, which granted SCE a certificate to construct the facility. But, in June 2007, the Arizona Corporation Commission denied SCE's request for a permit to site the facility in Arizona. In May 2008, SCE asked the Commission to commence pre-filing for the Arizona portion of DPV2, and the Commission granted the request.

The developers of other electric transmission projects in the two National Corridors may seek siting authorization from the Commission. These projects are either in the planning stage (i.e., have been announced, but have not yet been filed with the relevant state siting authority) or are currently pending before the relevant state siting authorities.

REFORM OF THE OPEN ACCESS TRANSMISSION TARIFF

In April 1996, the Commission adopted Order No. 888. This Order required all public utilities that own, control or operate facilities used for transmitting electric energy in interstate commerce to offer non-discriminatory service pursuant to an Open Access Transmission Tariff. The Commission also required these public utilities to “functionally unbundle” their generation and transmission services. This meant public utilities had to take transmission service for their own new wholesale sales and purchases of electricity under their open access tariff, and separately state their rates for wholesale generation, transmission and ancillary services. Order No. 888 greatly enhanced the ability of wholesale customers (and retail customers, if allowed by state law) to reach alternative suppliers using the transmission systems of FERC-regulated public utilities.

Last year, the Commission revisited the terms and conditions of the open access tariff and, in Order No. 890, adopted several reforms. The goals of the reform were to: (1) strengthen the open access tariff to ensure that it achieves its original purpose of remedying undue discrimination; (2) provide greater specificity to reduce opportunities for undue discrimination and facilitate the Commission’s enforcement; and (3) increase transparency in the rules for planning and use of the transmission system.

Specifically, Order No. 890 required the following changes to the open access tariff: open, coordinated and transparent planning on both a local and regional level; greater consistency and transparency in the calculation of the transmission capacity available for use by customers; adoption of a “conditional firm” component to long-term point-to-point service, expanding the service options available to customers; and less stringent penalties for imbalances created by intermittent resources, such as wind turbines and solar power. At the same time, the Commission retained core elements of Order No. 888, such as the comparability requirement, protection of native load, and state jurisdiction over bundled retail load.

The planning requirements of Order No. 890 are particularly important. Having an open and transparent planning process helps eliminate opportunities for discrimination and provides customers with information and studies that will help them decide whether potential upgrades or other investments could reduce congestion or enable integration of new resources. Order No. 890 also required that, where demand resources are capable of providing the functions assessed in a transmission planning process and can be relied upon on a long-term basis, they should be considered on a comparable basis to other resources.

Order No. 890’s regional planning requirements will improve coordination of planning among utilities. Ownership of the interstate transmission grid is highly disaggregated, with more than 500 owners. Before Order No. 890, many transmission expansions were planned by individual transmission owners, as if we had 500 distinct power grids. Like the interstate highway system, however, the transmission grid is not merely a collection of local systems that can be planned on a stand-alone basis. The need for, and effect of, transmission expansions must be considered on a local, sub-regional, and regional basis. To that end, Order No. 890 required transmission providers to expand their planning processes to provide for coordination among transmission providers in the same region. Transmission providers also were directed to establish planning processes to consider not only upgrades that are necessary to maintain reliability of the transmission grid, but also additional expansions that, although not strictly needed for reliability, could enhance the economic operation of the grid. The consideration of both reliability and economic needs, on a local and regional level, is essential to ensuring the proper functioning of the interstate transmission system.

ALLOCATING THE COST OF TRANSMISSION UPGRADES

With the need for more transmission, the Commission faces the issue of who will pay for the transmission upgrades. As noted above, the U.S. has regional power grids, but fractured ownership of these regional grids. That complicates cost allocation decisions. This issue arises particularly in the context of regional transmission organizations (RTOs) and independent system operators (ISOs), but also among utilities in other regions and even among the transmission customers of an individual utility. In a number of regions, the Commission has made regional cost allocation

determinations. These decisions encourage investment, by avoiding project-by-project litigation.

As part of the open and transparent planning processes required in Order No. 890, the Commission directed transmission providers to work with their stakeholders to address the issue of cost allocation for new projects that do not fall under existing rate structures. In particular, the Commission suggested in Order No. 890 that new facilities eligible for cost allocation under the new rate provisions might include regional projects involving several transmission owners or economic projects that are identified independently from individual requests for service.

The Commission suggested several factors for evaluating a cost allocation methodology. First, a cost allocation proposal should fairly assign costs among participants, including those who cause them to be incurred and those who otherwise benefit from them. Second, the cost allocation proposal should provide adequate incentives to construct new transmission. Third, the cost allocation proposal generally should be supported by state authorities and participants across the region. The Commission stressed that each region should address cost allocation issues up front, at least in principle, rather than triggering relitigation each time a project is proposed. In Order No. 890-A, the Commission also made clear that the details of proposed cost allocation methodologies must be clearly defined, as participants considering new transmission investment need some degree of cost certainty.

In response, transmission providers have submitted a number of proposals to address cost allocation for new projects on both a local and regional basis. The Commission has acted on several of these new filings in recent months, while others remain pending before the Commission.

In RTO and ISO regions, the cost allocation proposals have built on existing policies intended to attract investment, tailored as appropriate to the physical differences and regional needs of each RTO and ISO. For example, in April 2005, the Commission approved a cost allocation for Southwest Power Pool (SPP) in the south central United States, specifically for its “base plan facilities,” i.e., reliability-related network upgrades needed to meet SPP’s reliability planning criteria. Under the approved allocation, the cost of base plan facilities costing less than \$100,000 is allocated to the transmission zone in which the upgrade is located. For base plan facilities costing more than \$100,000, one-third of the cost is allocated across the SPP system, while the remaining two-thirds is allocated to specific zones based on a “megawatt-mile” engineering analysis.

In November 2006, the Commission accepted a methodology proposed by Midwest Independent Transmission System Operator, Inc. (MISO) to allocate 20 percent of the costs of high-voltage “baseline reliability” network upgrades on a system-wide basis and allocate the remaining 80 percent to affected transmission owners based on a load flow analysis. In March 2007, the Commission conditionally accepted MISO’s proposal to allocate 20 percent of the costs of regionally beneficial projects (e.g., new economic projects) on a system-wide basis and allocate the remaining 80 percent among three sub-regions based on a “beneficiary pays” approach.

And, in April 2007, the Commission approved a cost allocation plan for PJM. Under the approved plan, the costs of existing transmission facilities within PJM are allocated to the utility that owns the facilities. For new facilities below 500 kV, the costs would be assigned on a “beneficiary pays” approach. The costs of new facilities at 500 kV or above are allocated on a system-wide basis across PJM, in recognition of the broad regional benefits of these “backbone” facilities.

TRANSMISSION INVESTMENT

The United States is just coming out of a long period of sustained underinvestment in the power grid. Investment in transmission facilities in real terms declined significantly between 1975 and 1998. While investment increased somewhat after 1998, expansion of the interstate transmission grid in terms of circuit miles in 2005 was only 0.5 percent. Transmission expansion was still lagging behind demand growth.

This lack of investment prompted the Commission to consider new pricing policies to encourage the construction of new transmission facilities. After the Commission initiated a proceeding on these policies, Congress amended the Federal Power Act, through EAct 2005, to require the Commission, within one year of EAct 2005’s enactment, to establish incentive-based rate treatments for transmission. Congress specified that these incentives were “for the purpose of benefitting consumers by ensuring reliability and reducing the cost of delivered power by reducing transmission congestion.”

In July 2006, pursuant to this new directive, the Commission issued Order No. 679, allowing utilities to seek rate incentives such as: (1) incentive rates of return

on equity for new investment in transmission facilities; (2) full recovery of prudently incurred transmission-related construction work in progress costs in rate base; and (3) full recovery of prudently incurred pre-commercial operations costs. The Commission allows these incentives based on a case-by-case analysis of individual transmission projects. The burden is on the applicant to justify incentives. Incentive rates remain bounded by the “zone of reasonableness” governed by the Federal Power Act, thus protecting transmission customers against excessive rates.

Since adoption of these regulations, the Commission has received more than 30 applications for rate incentives for transmission projects, representing thousands of miles of high-voltage transmission facilities. These facilities will permit the interconnection of many thousands of megawatts of additional generation capacity.

The applications have included major “backbone” projects widely recognized as providing significant benefits. For example, one case involved Southern California Edison Company’s “Tehachapi Project,” to provide transmission for up to 4,500 megawatts of primarily wind generation into the Los Angeles area. Other cases included transmission facilities to allow substantially more imports of economic power from the Midwest into New Jersey, eastern Pennsylvania and nearby areas. Few transmission projects of this size have been developed for many years.

Often, the amount of new investment almost equals the transmission owner’s existing investment in transmission facilities. Specifically, in a number of cases, the new investment is as much as 80 percent of existing investment.

At the same time, the cost of transmission is still just a small part of consumers’ cost of electricity, typically less than ten percent. Yet, investments in new transmission facilities can significantly reduce the much-larger generation component of the total cost, by allowing buyers to reach cheaper but more distant supplies. As a result, transmission expansions can reduce overall costs to consumers.

The new projects also are often designed to increase fuel diversity and deliver renewable energy. The Tehachapi Project is one example of this. Others include a proposal by Pacific Gas & Electric Company to build a thousand-mile transmission line to import up to 3,000 megawatts of new renewable power from Canada, and a billion-dollar proposal by Northern States Power to expand its transmission system to access between 300 and 700 megawatts of windpower.

Finally, major transmission expansions have been proposed in almost all regions of the country. The geographic diversity of these projects demonstrates that transmission underinvestment is a national issue, as Congress rightly recognized in EPAct 2005.

While the Commission has approved a number of applications for incentives, the Commission also has denied requests for incentives when the requests did not meet the standards in Order No. 679.

Overall, investment in transmission facilities appears to be increasing. For example, data released by the Edison Electric Institute indicates that investment by investor-owned utilities (in real terms, 2006) increased gradually from \$4.6 billion to \$5.3 billion in 2000-2004. Investment then jumped to \$6.3 billion in 2005 and \$6.9 billion in 2006. Investment is projected to increase to \$10.2 billion in 2010. I believe the Commission’s implementation of EPAct 2005’s incentive provisions is a factor in these actual and projected increases. It is important that the Commission maintain policies to encourage greater transmission investment.

POLICIES FOR INTERCONNECTING GENERATORS TO THE TRANSMISSION GRID

In order to facilitate the interconnection of new generation facilities to the transmission grid, the Commission has adopted standard procedures and agreements for interconnecting with the transmission facilities of jurisdictional public utilities. In the past, transmission providers with their own generating facilities had the incentive and ability to deny, delay, or make expensive the interconnection of rival generating facilities. The Commission eliminated that ability of public utilities to discriminate through a series of rulemaking proceedings to standardize the generator interconnection process. The resulting procedures and agreements vary depending on the size and nature of the generation facility, providing flexibility for small facilities and non-synchronous technologies, such as wind plants. Taken together, these standardized procedures and agreements offer comparable, open access to rival generators seeking to interconnect with their local transmission provider.

Recently, the Commission has expressed concern regarding the growing backlog of generator interconnection requests. In some regions, many interconnection requests pending in study queues appear to be for speculative or unlikely projects. Because interconnection requests are studied on a first come, first served basis, the resulting backlog in study queues is causing delay for projects ready to move forward. This problem seems to be particularly significant in markets operated by

RTOs and ISOs, which have attracted significant new entry to the marketplace. Earlier this year, the Commission provided guidance to RTOs and ISOs on possible reforms that could be implemented to alleviate the backlog in processing generator interconnections. In response, interconnection queue reform proposals have already been filed by the California ISO and MISO. The Commission acted on the California ISO proposal earlier this month, while the MISO proposal remains pending.

Finally, I would note the Commission's willingness to be flexible in its approach to transmission rate design. As an example, when Southern California Edison Company proposed the Tehachapi Project, traditional Commission policy would have required the first wind generators on the line to pay the line's full cost, even if they used only a small part of the line's capacity. This policy would have discouraged development of the wind resources, which were located far from existing transmission lines. Wind and other renewable resources are often location-constrained in this way, with less flexibility than other types of generation to locate near existing transmission lines. To recognize this difference among transmission customers, and reduce barriers to development of renewable resources, the Commission approved a cost allocation under which the wind generators would pay only for the capacity they used, and any remaining costs would be allocated to other customers until the line was fully used.

CONCLUSION

In conclusion, the Commission has three overarching transmission policy goals: protecting the reliability of the bulk power system, assuring open and nondiscriminatory access to the transmission grid, the interstate highway system for wholesale power sales, and encouraging development of a robust transmission grid. In EPAct 2005, Congress gave us new regulatory tools to achieve these goals. I believe we have carefully used these authorities in the manner Congress intended. Much progress has been made in achieving our key policy goals, but more must be done.

The CHAIRMAN. Thank you very much for your testimony. Secretary Kolevar, why don't you go right ahead with your testimony?

STATEMENT OF KEVIN M. KOLEVAR, ASSISTANT SECRETARY FOR ELECTRICITY DELIVERY AND ENERGY RELIABILITY, DEPARTMENT OF ENERGY

Mr. KOLEVAR. Thank you, Mr. Chairman, Senator Domenici and members of the committee for the opportunity to testify before you on the Department's work to overcome the challenges of building transmission to meet growing electricity demand and in our efforts to responsibly implement both the letter and the spirit of the Energy Policy Act of 2005.

I will share Chairman Kelliher's sentiments with respect to the significance of that legislation. It is a very far reaching statute. We do hope that it will remain on the books, at least in as robust a fashion as we see today.

The chairman spoke a little bit at the beginning of his testimony about the nature of the grid. I'll start a little differently and discuss demand. Then I'll move into the Department of Energy's actions to implement the three most significant components of the electricity title of the 2005 act.

As a Nation our population has grown nearly 25 percent in the last two decades. During this time period peak electricity demand has grown over 53 percent. Unfortunately whereas new generation has largely kept pace with demand, transmission infrastructure has grown only 12 percent in the same period that reflects the under investment that the chairman mentioned.

There's more of course. By 2030 the Energy Information Administration projects an additional 30 percent increase in U.S. electricity demand. This is a projection that already accounts for future efforts to improve energy efficiency and demand response.

This Administration understands that modernization of the existing electric transmission and distribution infrastructure is a critical component of a secure energy future. Largely because much of the Nation's future electricity demands will be met by generation sources that are distant from load. This applies in particular to many new types of clean and abundant energy sources.

For example, most of the Nation's best utility scale wind, geothermal and solar resources are located in remote areas where existing transmission capacity is either minimal or non-existent. Most new nuclear power plants will not be sited in populous areas and will likely require additional transmission capacity. Clean coal generation with carbon sequestration and storage will presumably be sited near geologic formations suitable for sequestration and may not be near existing transmission facilities.

At the Department we're working to implement the electricity title of the Energy Policy Act of 2005 to ensure that transmission development remains a viable tool. Not the only tool, but a viable tool to solving electric delivery challenges. As directed by EPACT 2005, DOE conducted the National Electric Transmission Congestion Study of 2006 which analyzed generation and transmission capacity across the United States and identified geographic areas that have existing or emerging transmission congestion and constraint problems.

As a result of the study findings, in April 2007 the Department designated two draft national corridors, one in the Mid Atlantic area and one covering both Southern California and Western Arizona. I think it's important to speak to this for just a minute. The issuance of these corridors in draft form was not called for by the statute.

It was done voluntarily by the Department as a measure, an opportunity so that stakeholders, the States, the utility commissioners, and others interested in the ramifications and implications of designation, had an additional opportunity to see what the Department's thinking was on this matter and to speak to the Department about the significance of the Department's actions. I will tell you that we benefited greatly from that comment period.

We received a great number of comments. They contribute significantly to the thinking of the Department of Energy as we move forward on these activities. So after consideration of these comments on October 5th of last year, the Secretary of Energy designated these two areas as national corridors with some modification to the corridor in the Southwest, dropping Clark County, Nevada.

National corridors identify areas where transmission systems are not keeping pace with electricity requirements. Corridor designation indicates that the Federal Government has concluded that a significant transmission constraint or congestion problem exists in that area. That these problems adversely affect consumers and it is in the national interest that the problems be alleviated.

Corridor designation does not constitute a finding that additional transmission capacity must be built in the affected area. It does not mean that additional transmission is the only or the best solution to resolve congestion. Likewise these designations do not propose,

direct, or permit anyone to build anything. They do not equate to a determination of a route for a proposed transmission line.

State authorities continue to have primary responsibility for deciding how to resolve transmission congestion problems, evaluating transmission projects and the siting of transmission facilities. DOE is also working to streamline transmission siting decisions pursuant to section 368 of the Energy Policy Act. Senator Craig, this speaks to the difficulty that you noted in siting power transmission lines, in particular across Federal lands.

This law directs the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to identify corridors for crude oil and product pipelines to include hydrogen pipelines and electric infrastructure. To incorporate the designed corridors, really larger rights of way, into relevant agency land use and resource management plans or equivalent plans. We have been hard at work on this over the past couple of years, Mr. Chairman.

I'm pleased to tell you that the agencies expect to have a final Programmatic Environmental Impact Statement for these rights of way in the 11 western States out by the end of the year. At which point the land management agencies can move forward on altering land use plans as necessary. The Department is also moving forward now on looking at the eastern States for the purpose of the energy corridors.

In EPACT, Congress also assigned a role to the Department to facilitate the Federal approval required to site a transmission facility. section 216(h) of the Federal Power Act now requires the Department to act as the lead agency for purposes of coordinating all applicable Federal authorizations and related environmental reviews needed for siting electric transmission facilities. DOE has submitted draft regulations implementing the provisions of 216(h) to OMB for interagency review. Federal registered publication of this regulation is anticipated in the very near future.

As we look for opportunities to deploy clean power to enact cost effective clean energy programs, it's important to remember that every kilowatt hour of projected demand growth, that is not met through energy efficiency or demand response programs will have to be met from new supply. We expect that the need for net new generation capacity and low carbon generation, in particular, will continue to increase and with this will come the need to ensure that this electricity can be delivered reliably and affordably to consumers.

Mr. Chairman, this concludes my statement. I look forward to your questions.

[The prepared statement of Mr. Kolevar follows:]

PREPARED STATEMENT OF KEVIN M. KOLEVAR, ASSISTANT SECRETARY FOR
ELECTRICITY DELIVERY AND ENERGY RELIABILITY, DEPARTMENT OF ENERGY

Mr. Chairman and Members of the Committee, thank you for this opportunity to testify before you on the Department's work to overcome the challenges of building transmission to meet growing electricity demand. This is a critical issue that our country is facing today, as one of the largest energy consumers in the world.

Our electricity grid is a complex and impressive system. It has to remain in a constant state of balance in order to function properly. The demand has to be equal to the load at all times. The grid operators who work to achieve this constant state of balance are among the most skilled and talented workforce in the world.

However, there is only so much that they can do in this effort. We as a Nation have to start thinking about upgrading and modernizing our electric systems in order to keep pace with increasing demand and a changing generation mix.

The electrical system in the continental U.S. is broken into three distinct systems. These are the Eastern Interconnect, the Western Interconnect, and the Electric Reliability Council of Texas (ERCOT). The Eastern Interconnect consists of 36 different States plus the District of Columbia, and partially covers 3 more, serving about 100 million customers. The Western Interconnect covers most of 11 States plus Western Texas, serving 29 million customers. ERCOT covers most of the state of Texas, serving 11 million customers. It is important to lay these statistics out on paper, as it literally shows that we are all “interconnected”.

As a Nation, our population has grown nearly 25 percent in the last 2 decades. During this time period, electricity (summer peak) demand has grown over 53 percent. In order to keep up with this growth in demand, we have developed new generation. Since 1996, total electricity demand has grown by 18 percent, and the industry has kept pace with this, illustrated by a 27 percent growth in total generating capacity.

However, transmission infrastructure growth in the same period did not keep pace. We have seen only a 6.8 percent growth in total transmission line miles in that same period, and only 12 percent over the last two decades. While there has been an uptick in the development of new transmission infrastructure since 2005, these have typically been small upgrades needed for reliability, not components of the large, high-voltage, multistate, and inter-regional transmission network needed to deliver reliable and clean energy from remote locations to population centers.

By 2030, the Energy Information Administration projects a 30 percent increase in U.S. electricity demand, a projection that accounts for future efforts to improve energy efficiency and demand response. Although this is a positive indicator of a growing economy, it means a significant amount of new demand on electricity generation and transmission systems that are already stressed and aging. Thus, to keep our lights on and to ensure that consumers have access to clean and affordable electricity, this country needs to add not only substantial new generation capacity, but new transmission infrastructure as well.

As I believe we all understand, electricity is the backbone of our economy. Without a robust, reliable and affordable supply system, the operation of all sectors of our economy, the well being of our citizens, and our national security will be severely threatened.

Of course, the Department continues to invest heavily in the research and development of a wide range of advanced clean energy technologies, including renewable generation like wind and solar power, clean coal technologies with carbon capture and storage, and next generation nuclear reactors. DOE also devotes significant resources to energy efficiency and related demand-side technologies. These demand-side measures, such as conservation and increased efficiency, are almost always less costly and can be implemented much faster than supply-side resources. Advancement of these clean generation and demand-side technologies and their increased market penetration are critical to the President’s vision of a cleaner, more secure energy future.

This Administration also understands that modernization of the existing electricity transmission and distribution infrastructure paired with the development of a new long distance, high voltage transmission network is a critical component of a secure energy future; largely because much of the Nation’s future electricity demands will be met by generation sources that are distant from load. This applies to many new types of clean and abundant energy sources. For example:

- Most of the Nation’s best utility scale wind, geothermal, and solar resources are located in remote areas where existing transmission capacity is either minimal or nonexistent;
- Most new nuclear plants will not be sited in populous areas, and will likely require additional transmission capacity;
- Clean coal generation with Carbon Capture and Storage (CCS) will presumably be sited near geologic formations suitable for CO₂ storage, and may not be near major existing transmission facilities.

The good news is that, as evidenced by this Committee’s ongoing interest, people are increasingly focusing on the changes that will be required to our existing infrastructure as we pursue new energy generation sources. It is increasingly apparent that without major investments in transmission, many of the optimal wind and solar sites will not be viable.

At the Department, we are working to ensure that transmission development is considered early in the development of new generation planning and have undertaken several initiatives in this effort.

As directed by the Energy Policy Act of 2005 (EPAct), DOE conducted the National Electric Transmission Congestion Study of 2006, which analyzed generation and transmission capacity across the U.S. and identified geographic areas that have existing or emerging transmission congestion and constraint problems. Upon completion of the study, the Department was required to issue a report, based on the study, in which the Secretary of Energy “may designate any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers as a national interest electric transmission corridor.”

During the development of the study, which relied on extensive consultation with States and other stakeholders, the Department provided numerous opportunities for discussion and comment by States, regional planning organizations, industry, and the general public as required by FPA section 216(a)(1). The Department initiated a series of conference calls with States in December 2005 and January 2006 to describe the Department’s plan for the development of the Congestion Study and to request their suggestions and relevant information. On February 2, 2006, the Department published a Notice of Inquiry explaining the Department’s intended approach for the Congestion Study and invited comment. On March 29, 2006, the Department held a technical conference for the public in Chicago, Illinois to address the questions presented in the Notice of Inquiry. In addition to these efforts, the Department held numerous meetings with State officials to discuss the Congestion Study and participated in several State conferences and events where information about the study was presented.

The Department sought input from the following organizations: National Conference of State Legislatures, Seattle, WA, Aug. 18, 2005; Southern States Energy Board, Atlanta, GA, Aug. 27, 2005; Midwest State Energy Office, via webcast, Aug. 31, 2005; National Association of State Energy Officials, New York, NY, Sept. 12, 2005 and Washington, DC, Feb. 7, 2006; CREPC, San Diego, CA, Sept. 20, 2005, Sept. 27, 2006, and Portland, OR, April 4, 2006; NARUC, Palm Springs, CA, Nov. 14, 2005, Washington, DC, Feb. 14 3 and 22, 2006, San Francisco, CA, Aug., 1, 2006, and via conference calls on Jan. 11, 2006, and June 16, 2006; NYPS, Albany, NY, Dec. 20, 2005; OMS, via conference call, May 11, 2006; Florida Public Service Commission, Tallahassee, FL on June 15, 2006; Midwestern Legislative Conference, Chicago, IL, Aug. 20, 2006; Organization of PJM States, Inc., Cambridge, MD on Sept. 17, 2006; CPUC, via conference call on Sept. 20, 2006; CEC, via conference call on Sept. 22, 2006; and Maine PUC, via conference call, Oct. 6, 2006.

In April 2007, the Department designated two draft National Corridors, one in the Mid-Atlantic area and one covering both Southern California and Western Arizona. The releasing of national corridors in draft form was an additional action not required by law for the specific purpose of providing all interested parties with additional opportunities to provide input and comments. During the comment period, the Department conducted dozens of hours of public meetings across the country, and held extensive consultations with State officials, local agencies, regional entities, and the public. On October 5, 2007, the Secretary of Energy designated these two areas as National Corridors—the Mid-Atlantic Area National Corridors and the Southwest Area National Corridor.

The National Corridors identify areas where the transmission systems are not keeping pace with electricity requirements. Corridor designation indicates that the Federal Government has concluded that a significant transmission constraint or congestion problems exists in an area, that these problems adversely affect consumers, and that it is in the national interest that the problems be alleviated.

Corridor designation does not constitute a finding that additional transmission capacity must be built in the affected area; and it further does not mean that additional transmission is the only, or the best solution to resolve the congestion. In fact, the Department already goes to great lengths to encourage additional local generation, demand response and energy conservation as solutions to electric system challenges.

Likewise, these designations do not propose, direct or permit anyone to build a transmission facility; and do not equate to a determination of a route for a proposed transmission facility. State authorities continue to have primary responsibility for deciding how to resolve transmission congestion problems, evaluating transmission projects, and the siting of transmission facilities.

After thoroughly and carefully considering both the properly filed requests for rehearing and other comments the Department received, DOE denied requests for rehearing of the National Corridors in March 2008.

The Department is currently undertaking the second National Electric Transmission Congestion Study, to be issued in August of 2009, as required by EPAct. The law requires DOE to prepare national congestion studies on a set schedule, and although it authorizes DOE to designate National Corridors, it does not require such designations.

The Electricity Office is in the process of conducting six regional workshops to receive and discuss input on what publicly-available data should be considered to identify and understand the significance and character of transmission congestion for the Congestion Study, including comments. We have already held workshops in San Francisco, Oklahoma City, Hartford, Atlanta, and we will conduct two more workshops in Las Vegas and Chicago between now and mid-September. We encourage all interested stakeholders to review the papers and transcripts on our website and submit comments. We are emphasizing contacts with States, regional transmission planning entities, and others to compile an accurate assessment of transmission congestion for this study.

As the challenges to continued electric reliability are not only technical, but also structural, DOE is also working to harmonize the multitude of State and Federal regulatory rules such that they complement, rather than conflict with each other. Today, a key challenge to timely development of the appropriate network of wires and other facilities required to reliably deliver new electricity to American consumers is the rigorous and lengthy State and Federal authorization requirements.

On the Federal side, we are doing our part to coordinate and streamline transmission siting decisions pursuant to Section 368 of EPAct. Section 368 directs the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior (the Agencies) to identify corridors for crude oil, petroleum distillate fuels, natural gas, and hydrogen pipelines and electricity transmission and distribution facilities, and to incorporate the designated corridors into relevant agency land use and resource management plans or equivalent plans. Section 368 also directs the agencies to take into account the need for upgraded and new infrastructure and to take actions to improve reliability, relieve congestion, and enhance the capability of the national grid to deliver energy.

Section 368(a) requires such designations for Federal lands in the 11 contiguous Western States, while section 368(b) requires corridor designations be made in the remaining 39 States. The Agencies are preparing Programmatic Environmental Impact Statements addressing Federal lands under both sections 368(a) and (b).

At this time the Agencies are reviewing and drafting responses to the 14,000 comments (which includes over 1,000 substantive comments) addressing corridor location and other suggested revisions received on the Draft Programmatic Environmental Impact Statement for the Designation of Energy Corridors in Eleven Western States. We expect to have the Final Programmatic Environmental Impact Statement for the Designation of Energy Corridors in Eleven Western States out by the end of this year. A Notice of Intent to conduct a Programmatic Environmental Impact Statement regarding corridor designations in the remaining 39 States will soon be published by the Agencies.

In EPAct, Congress also assigned a role for DOE to facilitate the Federal approval required to site a transmission facility. EPAct added section 216(h) to the Federal Power Act, requiring the Department to act as the lead agency for purposes of coordinating all applicable Federal authorizations and related environmental reviews needed for siting electric transmission facilities. The purpose of this coordination is to streamline agencies' review processes and avoid duplication among Federal agencies.

In August 2006, DOE and eight other Federal agencies signed a Memorandum of Understanding to facilitate implementation of the 216(h) coordination process. The MOU establishes a framework for early cooperation and participation that will enhance coordination of all applicable land use authorizations and related environmental, cultural, and historic preservation reviews, as well as any other approvals that may be required under Federal law in order to site an electric transmission facility. DOE has delegated its section 216(h) coordination responsibilities for transmission projects in National Corridors to the Federal Energy Regulatory Commission (FERC).

DOE has submitted draft regulations implementing the provisions of section 216(h) to the Office of Management and Budget for interagency review. It is our hope that this process will be completed in the very near future.

Finally, the Department has been providing financial and technical assistance to States and regional planning entities to improve the effectiveness of the entire range of electricity options available—energy efficiency, demand response, electricity storage, and development of a smarter grid. In the area of Smart Grid, for example, we are implementing the provisions in Title 13 of the Energy Independence and Se-

curity Act of 2007, which directs us to implement a program to research, develop, and demonstrate smart grid technologies; report to Congress every two years on the status of smart grid deployments; establish a smart grid advisory group and an energy storage advisory group; and establish a smart grid task force among relevant Federal agencies.

As we look for opportunities to deploy clean power and to enact cost-effective clean energy programs, it is important to remember that the electric industry exists to reliably and safely meet consumer demands. Every kilowatt-hour of projected demand growth that is not met through energy efficiency or demand response programs will have to be met from new supply. We expect that the need for net new generation capacity will continue to increase, and with this, the need to ensure that these sources can be delivered reliably and affordably to consumers. As previously stated, the Department does not believe that additional transmission is the only, or necessarily the best solution to resolve the difficulties ahead in meeting load growth; we encourage State or regional planning entities to also consider all local generation, demand response and energy conservation options available.

Nevertheless, the fact of the matter is that more investment in transmission will have to be on the table as a major tool to achieve the energy goals that this Administration, Congress, States, and industry leaders share, to achieve a secure and clean energy future.

This concludes my statement, Mr. Chairman. I look forward to answering any questions you and your colleagues may have.

The CHAIRMAN. Thank you very much.
Commissioner Smith, why don't you go right ahead?

**STATEMENT OF MARSHA H. SMITH, COMMISSIONER, IDAHO
PUBLIC UTILITIES COMMISSION, BOISE, ID**

Ms. SMITH. Thank you. I appreciate the opportunity and the committee allowing us to appear here today before the committee and especially thank Senator Craig for his warm welcome in a setting that can sometimes be very intimidating for a person from the Hinterland, like I am. Thank you for your service to the State.

I want to touch on reliability. As Chairman Kelliher mentioned the provisions with regard to reliability allow for the delegation of certain responsibilities to entities that are organized on an interconnection wide basis like the Western Electricity Coordinating Council. WECC is the regional reliability organization for the Western Interconnection.

The delegation of these responsibilities is critical to the successfully maintaining the most efficient, least cost and most reliable operation of the bulk power system in the West. So we appreciate those delegation provisions and the farsightedness of Congress in knowing that this region would need those.

With regard to the DOE congestion studies as mentioned by Secretary Kolar they issued the first one in August 2006. The States appreciate DOE working with regional entities to assess congestion improvements, to assess those congestion areas. But we do think that improvements can be made. DOE outlines certain principles for those congestion studies in the summer of 2006. But it doesn't appear that the August 2006 study conforms with the principles that it established.

We also feel that there's not a clear and consistent method for measuring transmission congestion. The use of different metrics to the same set of transmission paths leads to different conclusions and rankings with regard to congestion. We commend DOE also for its support of WECC and its efforts to gather the data and perform the analyses needed for these studies.

DOE has started its 2009 congestion study and stated that it will focus on recent and current congestion. That's important. It's necessary. But it's not sufficient.

We think they also need to be forward looking. That future generation additions that will support State and regional policies for renewables and for the associated transmission that will be needed should be analyzed. The important thing for transmission is not where we have been, but it's where we are going.

For the rest we recommend that DOE rely upon and let the WECC TEPPC Committee take the lead on this with regard to the congestion studies. The 2009 Congestion Study should also have high standards for transparency and thoroughness using established processes and data gathering in that process. We also would ask DOE to put more emphasis on section 1221(h) which is corridors across Federal lands.

As Senator Craig mentioned earlier Federal agencies are still the major delay in siting in the West. But I would note that some of those local entities that have the responsibilities with regard to this issue have not been given adequate resources in terms of budget or staff to carry out those responsibilities. So we need to enable them to do the job that they've been asked to do.

With regard to FERC backstop siting authority, States believe that FERC should only be exercising that authority when a State fails to act or does not act in a timely manner. I also note that under the FERC rules states are given 1 year to consider applications before FERC starts its pre-filing process. We believe this 1 year clock should be stopped in fairness, if the reason for the state delay is the failure of the Federal land management agency to do its duties and that's the hold up.

First, and with regard to cost allocations I think FERC should recognize that in non-RTO regions cost allocations for new transmission will not be a mathematical formula as it is in RTO tariffs. That FERC should accommodate the cost allocation procedures of non-RTO regions to achieve the most efficient, quickest way to get new transmission.

With regard to incentive rates for transmission we believe that FERC should use these sparingly in the appropriate circumstances as outlined in the statute and that when there are cost overruns, the applicant should not get the incentive on the cost overruns.

With regard to Chairman Kelliher's remarks about his gas pipeline model for transmission siting, of course I would not agree with that model. But I think this is a serious topic that deserves its own hearing, its own study and investigation more than we could go into today. Except that it did occur to me that perhaps it's a good model for siting on Federal lands.

Finally, with regard to customer bills and this being a small portion of transmission there are a lot of pressures on customer's bills these days. Not just their electricity bills, but all their bills. But I pay attention to electricity. It doesn't matter if transmission is a small fraction of the bill. Every little bit adds to the bill.

Thank you, Mr. Chairman. I appreciate your time.

[The prepared statement of Ms. Smith follows:]

PREPARED STATEMENT OF MARSHA H. SMITH, COMMISSIONER, IDAHO PUBLIC UTILITIES COMMISSION, BOISE, ID

Good morning Chairman Bingaman, Ranking Member Domenici, and Members of the Committee:

My name is Marsha H. Smith, and I am a member of the Idaho Public Utilities Commission (IPUC). I also serve as President of the National Association of Regulatory Utility Commissioners (NARUC), on whose behalf I am testifying here today. I very much appreciate the opportunity to appear before you this morning and offer a State perspective on transmission issues.

NARUC is a quasi-governmental, non-profit organization founded in 1889. Our membership includes the State public utility commissions serving all States and territories. NARUC's mission is to serve the public interest by improving the quality and effectiveness of public utility regulation. Our members regulate the retail rates and services of electric, gas, water, and telephone utilities. We are obligated under the laws of our respective States to ensure the establishment and maintenance of such utility services as may be required by the public convenience and necessity and to ensure that such services are provided under rates and subject to terms and conditions of service that are just, reasonable, and non-discriminatory.

There are many challenges to resolve prior to the development of the much needed growth in the transmission system that is so vital to reliable electric service, our economic growth, and our national security. Without greater development of and increased capacity in the transmission systems, our efforts to assemble the energy resources that will be necessary, should we embark on a policy that will constrain carbon emissions, may not achieve the desired results. Additionally, it has been projected that the demand for electric energy in the United States will grow by more than 30 percent over the coming decades. Significant upgrades will be necessary in order to meet this demand. Solutions to the current transmission challenges facing us are not quick, simple, noncontentious, inexpensive, nor, in some cases, obvious. Finding and implementing solutions will require cooperation by, not confrontation among, the various stakeholders. I would now like to address a few specific issues with regard to the state of the nation's transmission grid.

CONGESTION STUDY AND NIETCS

The Energy Policy Act of 2005 (EPA 2005) required the Department of Energy (DOE) to conduct a study of electric transmission congestion one year after the legislation was enacted, and every three years thereafter.¹ After considering alternatives and recommendations from interested parties, DOE must issue a report, based on the study, which may designate any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers as a national interest electric transmission corridor (NIETC).²

The first DOE Congestion Study was issued on August 8, 2006. On April 26, 2007, the DOE issued two draft NIETCs—the Mid-Atlantic Area National Corridor (some or all counties in Delaware, Ohio, Maryland, New Jersey, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia); and the Southwest Area National Corridor (seven counties in southern California, three counties in western Arizona, and one county in southern Nevada). On October 2, 2007, DOE finalized the designations of both NIETCs—the Mid-Atlantic Area National Interest Electric Transmission Corridor (Docket No. 2007-OE-01) and the Southwest Area National Interest Electric Transmission Corridor (Docket No. 2007-OE-02). DOE affirmed the NIETC designation orders on March 10, 2008.

NARUC PERSPECTIVE

At a July 18, 2006 Annual Pacific North West Economic Region Summit in Edmonton, Alberta, Canada, DOE listed the following principles during an "Ending the Stalemate" presentation:³

1. The initial round of NIETC designations should focus on the most congested areas in the country;
2. The NIETC designations must have clear and supportable boundaries;
3. The NIETC designations must be defensible and demonstrate due diligence—by both the DOE and regional planning entities;

¹Section 216(a)(1) of the Federal Power Act (FPA).

²Section 216(a)(2) of the FPA.

³See "Ending the Stalemate" July 18, 2006 DOE presentation at <http://pnwer.dataweb.com/tables/jointables/meetingparticipantjoin/files/presentation/souder.pdf#search=%22DOE%20Alberta%20corridors%22>.

4. DOE should not issue an NIETC designation until it has the information needed to bound an NIETC appropriate to the underlying problem;
5. Congress did not intend for DOE to become a planning or siting agency. The NIETC designations should not be route-specific, and siting should be left to those who have siting authority;
6. The NIETC designations should support, not conflict with, efforts and conclusions by regional planning entities; and
7. The NIETC concept is intended to overcome obstacles to transmission expansion, not impose new ones. The NIETC process must therefore be timely and simple.

NARUC's comments to DOE expressed its concern that the Congestion Study does not adequately conform to these principles or the express terms of the agency's statutory charge. In order to remedy these deficits, the agency should, at a minimum, (1) perform a more granular analysis of congestion prior to designating a specific NIETC and (2) work cooperatively with the various regional planning organizations and the affected States within each region. Specifically, a review of the Congestion Study highlighted the following problems:

1. The Congestion Study Methodology, without further review and explanation, should not provide the basis for any NIETC Designation;
2. EPCRA 2005 Section 1221 requires a full and productive consultation with affected States before DOE makes any NIETC designations;
3. There should be deference to areas with mature regional planning processes;
4. DOE should consider solutions other than transmission, such as initiatives to expand demand-response programs and relieve congestion problems and transmission constraints before making an NIETC designation; and
5. An NIETC designation should not be made unless cost allocation concerns have already been resolved.

NARUC appreciated the DOE Secretary's decision to solicit comments before taking final action on any specific NIETC designations. We commended the Secretary's attention to the comments made by NARUC members and State regional organizations on the Draft NIETC designations. NARUC did not make specific comments to DOE on either Draft NIETC; rather, NARUC focused on two general issues:

1. The default 12-year term for a NIETC Designation should be modified to a default three-year term to conform with the issuance of the Congestion Study; and
2. Clarification on DOE's authority under Federal Power Act (FPA) Section 216(a)(2) to designate a conditional area of congestion based solely on projections of future congestion.

NARUC did not appeal either the DOE Congestion Study or the NIETC designations. There are, however, pending appeals by individual States, regional, and national environmental groups of both NIETC designations in a number of federal district and appellate courts.

Western Perspective

The Western perspective is that the designation of the Southwest NIETC was based on anecdotal information and information from various transmission studies, not a systematic review of historical flow data provided by the Western Electricity Coordinating Council (WECC), the regional reliability organization.⁴ The breadth of the Southwest NIETCs, especially in southern California and western Arizona is too sweeping. DOE failed to develop objective metrics that would determine when there is congestion that would warrant a NIETC designation. The various measures WECC provided to DOE did not show any consistent pattern that would indicate one path in the West is more congested than any other. The Western Interstate En-

⁴See CREPC comments at http://www.westgov.org/wieb/reports/crepc/07-06-07CREPC_comments_SWNIETC.pdf and WECC comments at http://www.westgov.org/wieb/reports/crepc/07-06-07TEPPC_comments_SWNIETC.pdf. The Western Governors Association (WGA) passed a Resolution that says: "The Western Interstate Energy Board is to report to the Governors on whether the Department of Energy's designation or proposed designations of NIETCs in the West is based on sound analysis and information and whether such designations adequately incorporate information from state and regional renewable energy zone studies... The WGA staff and the Western Interstate Energy Board are directed to develop potential recommendations to the federal government on policy changes needed to enable the region to move renewable energy generation to market, including but not limited to changes to Sections 368 and 1221 of the Energy Policy Act of 2005, and changes to FERC Order 890." The full Resolution is at <http://www.westgov.org/wga/policy/08/electricity8-8.pdf>

ergy Board's Committee on Regional Electric Power Cooperation (CREPC) invited DOE to hold a workshop to develop metrics to define congestion. To date, it has not been held. Such a selective use of information undermines acceptance of a DOE designation.

In any case, the primary concern over adequate transmission in the West is not existing congestion; rather, it is future congestion that will result from locating new power plants. DOE has told its staff not to consider future congestion as part of their 2009 Congestion Study required by EAct 2005. Currently, DOE is in the process of preparing for the 2009 study and is holding regional workshops to consult with States and other stakeholders. During the first Western workshop in San Francisco on June 11, 2008, many participants raised similar points about congestion metrics and the need to be forward looking about analyzing congestion. The WECC transmission planning group, Transmission Expansion Planning Policy Committee (TEPPC) plans to take a closer look at congestion metrics in preparation for the 2009 Congestion Study.

DOE should be putting more emphasis on the implementation of EAct 2005 Section 1221(h). Federal agencies are the major cause of delay in transmission permitting in the West. This was true before the passage of the legislation, and remains the case. Aside from an interagency MOU, the federal agencies have not done much more to fix the problem. As to EAct 2005 Section 368, the idea of designating NIETCs across federal lands is a good one. Unfortunately, the federal agency work thus far is likely to be out-of-date and irrelevant when the NIETCs are finalized. Much has changed regarding fuel choices since the passage of the legislation. For example, the focus in the West is on renewable generation, not new coal plants. But, the proposed NIETCs were largely based on existing right-of-ways or transmission plans that had coal plants as the anchors of any new transmission. DOE should redo the Section 368 corridor work once the Western Governors Association's Western Renewable Energy Zones (WREZ) work is completed and load-serving entities (LSEs) indicate which zones they are interested in.

The geographic location of my home State makes it important to the future development of transmission in the western grid. Idaho has entered into a "Cooperating Agency Status" with the lead federal agency, the Bureau of Land Management, on the Gateway West Project. Obviously, access to federal lands is critical to the success of this venture. At 1.6 to 2.6 million dollars per mile, decisions that reroute transmission paths can result in extraordinary costs to consumers. The reality is that customers ultimately pay for transmission projects. Transmission is the key to insuring energy security and new generation resources (renewable, nuclear, natural gas, etc.) are dependent upon new transmission development.

SITING

A major impediment to siting energy infrastructure, in general, and electric transmission, in particular, is the great difficulty in getting public acceptance for needed facilities. This tells us that no matter where siting responsibility falls—with State government, the Federal government, or both—as prescribed in the EAct 2005, siting energy infrastructure will not be easy and there will be no "quick fix" to this situation.

During the EAct 2005 debate, NARUC opposed the "backstop siting" provision. NARUC's position prior to passage of EAct 2005 was, and continues to be, that to have the greatest economical and environmental benefits transmission facilities should not be nationalized; practical considerations require they be regionalized and that this regionalization should be encouraged, not required. Just as States have a role in the siting of interstate highways, States need to continue having an active role in transmission decisions.

EAct 2005 gave federal backstop siting authority of certain electric transmission facilities to the Federal Energy Regulatory Commission (FERC).⁵ Upon NIETC designation by DOE, FERC may issue permits to construct or modify electric transmission facilities if FERC finds that:

- (1) A State in which such facilities are located does not have the authority to approve the siting of the facilities or to consider the interstate benefits expected to be achieved by the construction or modification of the facilities;
- (2) The applicant is a transmitting utility but does not qualify to apply for siting approval in the State because the applicant does not serve end-use customers in the State; and
- (3) The State with siting authority takes longer than one year after the application is filed to act, or the State imposes conditions on a proposal such that

⁵Section 216 of the FPA.

it will not significantly reduce transmission congestion or it is not economically feasible.

To issue a permit, FERC must find that proposed facilities:

- (1) are used for interstate commerce;
- (2) are consistent with public interest;
- (3) significantly reduce transmission congestion in interstate commerce;
- (4) are consistent with national energy policy; and
- (5) maximize the use of existing towers and structures.

As Congress considered of EAct 2005, NARUC expressed deep concern with the language that eventually became Section 1221. At that time, NARUC opined that the language would in essence overrule legitimate State agency concerns and laws with regard to how a State ruled on a transmission project. The language would then permit FERC to vacate the decision and preempt State law and actions. Whether our initial observations and fears were accurate will only be determined by future decisions of FERC. FERC issued the Final Order—Order No. 689—implementing its backstop siting authority on November 16, 2006.

NARUC PERSPECTIVE

In its comments on the FERC rulemaking, NARUC said it expects that the backstop siting authority will have limited applicability because the majority of the State commissions have the authority to approve or deny, as the case may be, proposed transmission projects within their jurisdictions and because State commissions are frequently allowed to address the interstate benefits of proposed projects. Furthermore, many State statutes require a petitioner to obtain a certificate of public convenience and necessity, or some other similar certificate, from a State commission before constructing transmission facilities regardless of whether the applicant provides electric service to end-use customers. NARUC proposed that:

1. FERC clarify that federal backstop siting authority under FPA Section 216 is only triggered when the State Commission fails to or cannot act in a timely manner;
2. FERC clarify how it will apply the federal backstop criteria;
3. The proposed rule be revised to implement the due process requirements of the statute; and
4. The Final Rule adopted should incorporate a reference and deference to extensive siting records developed at the State level to prevent duplication and confusion.

The Final Order gives the States one full year to consider a transmission line siting application before the federal pre-filing process begins. The intent is to avoid conducting “parallel proceedings”—where a State commission and FERC would be considering a siting application at the same time. If such “parallel proceedings” were allowed, that process would create ex parte and prejudgment concerns under State law. Such a situation could potentially result in an applicant “gaming” the siting process by purposefully filing a deficient application to the State with the hopes of starting the one-year federal clock and precluding adequate State consideration of the application. NARUC did not appeal the FERC backstop siting rule. There are pending court appeals by individual States of this rule.

Western Perspective

The Western perspective is that Congress needs to clarify that if a State turns down a transmission line proposal for good reason and within a reasonable timeframe, FERC should not be able to second guess the State. In Order No. 689, FERC voted 4-1 in favor of saying that Congress did not care if a State acted timely or reasonably. FERC Commissioner Suedeen Kelly dissented by saying it was incomprehensible that Congress intended FERC to override timely State decision. Additionally, it only seems fair that the one-year clock for State action needs to be suspended whenever a federal agency is the cause for the State delay in a permitting decision.

COST ALLOCATION

State regulators are concerned about transmission reliability, adequacy, and the costs required to support the development of robust competitive wholesale markets. The investment that is needed to upgrade the nation’s transmission grid in order to support expanded wholesale power markets will cost billions of dollars. Notwithstanding the general benefit to the wholesale electric marketplace of encouraging the construction of new generating capacity and its interconnection to the grid, it

is also important to provide proper price signals to encourage optimal demand response and promote economic and efficient expansion of the transmission grid and siting of generation. The FERC has in the past adopted transmission pricing policies that generally provide for the direct assignment of costs to the parties causing the costs.

FERC Order No. 2000 stated the “[m]arket designs that base prices on the average or socialization of costs may distort consumption, production and investment discussions and ultimately lead to economically inefficient outcomes.”⁶ FERC has departed, in some instances, from a transmission pricing policy that provides for the assignment of costs to the cost-causative parties. In general, NARUC supports efficient pricing policies that result in the economic use and expansion of the transmission systems to support a robust wholesale electricity market. We recognize that transmission investments needed to maintain the reliability of the existing transmission systems should continue to be recovered through transmission rates charged to all transmission users. We advocate that the cost of upgrades and expansions necessary to support incremental new loads or demands on the transmission system should be borne by those causing the upgrade or expansion to be undertaken, except that FERC should not preclude the assignment of interconnection cost to the general body of ratepayers within a State when that State’s regulatory body determines that such allocation is in the public interest.

A robust regional electric transmission system is an essential prerequisite to support a) reliability and b) the market function allowing more generators to reach loads and compete directly for wholesale sales to such loads in order to increase competition among generation suppliers and meet national goals for renewable generation and energy independence. A new rate design is needed that will facilitate the construction of the strong transmission backbone required to support the nation’s wholesale electric markets, future increases in renewable generation capacity, and reliability.

INCENTIVE RATES

Pursuant to Section 1241 of EPAct 2005, which adds a new FPA Section 219, FERC proposed a rulemaking to amend its regulations to establish incentive-based rate treatments for the transmission of interstate electric energy by public utilities to ensure reliability and reduce the cost of delivered power by reducing transmission congestion. NARUC’s comments to FERC discussed the factors, other than the absence of incentive-based rate treatments that affect the level of transmission system investment, offered a framework for implementation of the new FPA Section 219, and discussed the role of research and development in encouraging the use of new technologies.

In particular, NARUC said that the Final Rule should require certain showings as a prerequisite for an award of incentives and provide that the amount of incentives awarded in connection with any particular project will not exceed the amount necessary to obtain construction of the proposed facilities. By specifying the purposes for which incentives are available and requiring FERC-jurisdictional rates to remain just and reasonable,⁷ Congress has clearly recognized the risks to customers involved in incentive rate awards. We said that FERC should carefully limit the availability of incentives to projects of the type specified in FPA Section 219 to reduce the risk that consumers will be forced to pay higher rates for the construction of facilities that would have been built regardless of the availability of an incentive or that do not provide substantial benefits to customers. FPA Section 219(a) clearly establishes that authorized “incentive-based rate treatments” are intended to facilitate the construction of new transmission facilities that either ensure reliability or reduce the cost of power by reducing congestion. NARUC asked FERC to include language in any rule adopted in this proceeding to ensure that a successful applicant for incentive-based ratemaking treatments must prove to the Commission that the proposed transmission facilities would not be constructed in the absence of an incentive award and that the proposed facilities will either materially improve reliability or materially reduce the overall cost of power by reducing transmission congestion. A failure to make the necessary showing will result in a denial of the application for an incentive award. Congress’s recognition of these limitations on the availability of incentives is appropriate given that some transmission investment will occur with or without incentive support and because the construction of new

⁶ Order No. 2000 at pp. 642-3.

⁷ FPA Section 219(d) provides that “[a]ll rates approved under the rules adopted pursuant to this section, including any revisions to the rules, are subject to the requirements of Sections 205 and 206 that all rates, charges, terms, and conditions be just and reasonable and not unduly discriminatory or preferential.”

transmission facilities may not invariably improve reliability or reduce costs to a degree appropriately reflective of the cost of the project.

Furthermore, while certain of the incentives proposed inherently specify the amount of the incentive to be awarded, the same is not true of other proposed incentives. As a result, NARUC asked that FERC should specify in its Final Order that the amount of incentives awarded in connection with any particular project will not exceed the amount necessary to obtain construction of the proposed facilities. FERC issued the Final Order—Order No. 679—on July 20, 2006.

For an example of the implementation of the FERC transmission incentives rule, please see the New England Conference of Public Utility Commissioners (NECPUC) involvement in the Docket: Docket No. ER08-69-000. One of the concerns recently voiced by the NECPUC was that applying rate of return adders to the actual cost of a project, regardless of how much the project's eventual cost exceeded original estimates, would create perverse incentives by rewarding transmission owners for bringing projects in over budget. On June 12, 2008, NECPUC filed a complaint with FERC in that Docket pointing out that the costs of many of the projects that FERC had ruled eligible for rate of return adders are now double and triple their originally estimated levels. The resulting cost of the incentive adder to ratepayers, NECPUC observed, would be far greater than FERC could have anticipated when it approved the adder. NECPUC urged FERC to prevent this result by limiting the adder to the transmission owner's original estimated cost. Because rapidly rising costs of material and construction is a nationwide phenomenon, FERC's ultimate disposition of NECPUC's complaint may have significant ramifications beyond New England. While we expect the Commission to fully consider the merits of these critical issues as it addresses the NECPUC complaint, this case may illustrate the extent that the policies Congress adopted in 2005 should be reexamined in light of changing market conditions.

In conclusion, there is much to be done to ensure that this nation avoids an "electric transmission crisis." The solutions to the challenges will not come quickly or easily. Finding these solutions will require cooperation by, not confrontation among, the various stakeholders, including State and federal government. Thank you and I look forward to your questions.

The CHAIRMAN. Thank you. Thank you all very much for your good testimony. Let me start with some questions and then defer to my colleagues.

Let me start with you Secretary Kolevar. I guess I would first of all just ask your explanation of the map that Senator Casey put up. It did look very much as though the Department of Energy has essentially said to most, 75 percent of Pennsylvania is a corridor.

That's not the common understanding that I've always had of the word corridor. I don't know that it was our intent to have the Department of Energy just designate large swaths of the country as corridors under this authority that was given to the Department of Energy. What's your explanation or justification for having the kind of very broad interpretation of that that you seemed to have taken?

Mr. KOLEVAR. Mr. Chairman, when we looked at the statute and were making our determination on how to responsibly interpret the statute, it speaks to both corridors and geographic areas. The reasons for having these, the corridors, larger, there are several reasons.

One is that the approach that we decided to adopt which is a source to sink approach, was intended to ensure that designation of corridors actually provided a potential solution to the problem. In other words if we had only put the corridors over the most congested areas of the country there would have been no practical transmission solution to resolving the congestion within them. They would have been designations with no real effect.

Perhaps you could have made them smaller it certainly would have been problem identification. But it would not have served as

a tool to the FERC, for example or for that matter to inform the States on where they might be considering transmission to put power into those heavily congested areas. So for the purposes of this discussion you would say Southern California and the Mid-Atlantic, but mostly the New York City, northern New Jersey area.

So that was the reason why we had the corridors reach farther out, away from just that heavily congested area into surrounding areas. It allows for existing transmission to be tapped into. That is certainly the case in the Mid-Atlantic area where you have a strong backbone in the Eastern Ohio region.

It allows you to bring power in from other areas of the country. In fact in the East, it allows you to bring hydro power down from Canada. The larger size also means that it is the FERC that will exercise the siting of transmission lines which we understand clearly, to be the intent.

In other words, Mr. Chairman, if we had made corridors very narrow, the Department of Energy would have, in effect, been a siting agency. We did not believe that that was at all the interpretation or the intent of Congress that it was FERC with its expertise in siting that would be carrying out that duties. So having that corridor wider, means that the Department of Energy is not at all specifying any potential route for a future transmission line.

To the contrary, having that corridor wider gives tremendous leeway to the FERC if there is ever a point in time in which the Commission has to consider using that backstop authority to site that line. They can only exercise that authority within the corridor. The larger the corridor, the greater the flexibility the Commission has to route around sensitive areas, historical areas or any of the other issues that the FERC considers, I believe on an everyday basis when it's siting natural gas lines.

So those are the reasons. It was——

The CHAIRMAN. Let me jump to another question here because I'm going to run out of time. With regard to this West Wide Energy Corridor, now it's a different kettle of fish than what we've been talking about in Pennsylvania or the one in Western Arizona, as I understand it. You were there designating areas, proposed corridors, which utilities can then use to build transmission capability, without having to go through additional environmental impact statement.

Mr. KOLEVAR. This is the 368 corridors that you're referring to?

The CHAIRMAN. Yes, that's exactly right. Yes, in New Mexico, let me just get down to a specific here and ask a question. In New Mexico you're designating such a corridor going down through part of the Saveta National Wildlife Refuge. As I understand it, instead of using transmission lines or existing rights of way there, you're designating a different area in that refuge.

I'm just wondering what is the realistic opportunity that people have to complain about that. To affect this before it is firmed up and finalized by the Department of Energy. Because it seems as though there's a lot of potential opposition.

The more people are going to know about this, the more opposition there's going to be, in my opinion, in my State. I'm just concerned that we may be engaged in a process here that is not, similar to what Senator Casey said, is not being sufficiently deferential

to the concerns of local government, to the concerns of local land owners, to the concerns of local groups. What's your response to that?

Mr. KOLEVAR. Mr. Chairman, we do our best to learn from each of these. We're executing new authorities in this respect. So I think every time we do this better.

With respect to the 368 rights of way. I do believe that the Department of Energy and the land management agencies have been working very diligently. We've, frankly, relied very heavily on the land management agencies to utilize their current public participation process.

It includes 14,000 comments, consultation with 250 tribes, and dozens of meetings across the west. Of course, this again, it's building on the back of what BLM does and the Fish and Wildlife Service does. So we do believe that there has been extensive outreach.

Now with respect to the draft and the National Wildlife Refuge that you mentioned, in the earlier draft, as I understand it, did route through the National Wildlife Refuge. Of course, I will tell you in that process this is not the Department of Energy's decision. This is a collective decision made by the Department of Energy with the land management agencies.

While the final PEIS is coming out, my understanding is that there has been reconsideration with respect to the routing through the National Wildlife Refuges. I expect that that would be public when we release the final PIS later this——

The CHAIRMAN. Alright.

Senator Domenici.

Senator DOMENICI. First of all thank you very much for holding this hearing. When I first started looking at it and yesterday when I started reading a little bit, I thought why are we doing this, this late in the year? You know, it's too late now.

But frankly, I believe it's a good hearing. It's important that we hear what we're hearing. It's important that we hear somebody as expert as the chairman tell us that he doesn't think we gave enough authority to the Federal Government with reference to transmission siting.

He compares it as an analogous siting situation. What's going on on pipelines? I would suggest, it's not all that easy to compare. One is much easier to do as you know.

It's a lot easier to construct 1,000 miles of underground pipeline which most of it is and the complexity of a grid connecting huge power capacity going for six or eight hundred miles. But your view is well taken. If in fact what we're doing doesn't work. It's certainly not going to look at easing up. They're going to have to look at more streamlining rights somehow.

I just wonder, between the two of you, could you? You heard a reputable Senator. We understand that we come down here as politicians, not technicians.

But you heard him talk about how concerned the citizens of his State were. He's only representing them. There are, how many of hundreds of petitions and resolutions they've received.

He contends in summary that it's arrogance. You didn't give them a chance to be heard.

Could you tell us your view on that? You're the ones they're addressing that to, you know? You're on the hot seat.

I'm wondering what'd you do? Did you give people a chance to have input or was it not that much necessary because it was a different animal than he thinks? You weren't producing anything final? Just answer it for the record so we'll know, both of you, please.

Mr. KOLEVAR. Let me start sir, by saying to the extent that the Senator or members of the delegation or the public think that there's been arrogance on behalf of the Department, that has never been our intent. I would apologize for that perception. He referenced the Secretary and his team, I'm sure he meant me and the people and the electricity office.

That has never been the Secretary's demeanor, to the best of my knowledge. It sure has never been mine. The Secretary would certainly never tolerate it.

With respect to the public outreach, the Department, we think, went beyond just a reasonable methodology for public outreach. We did our best to communicate the Department's actions and intentions across the country and of course, this with the exception of Texas, this touched all of the continental United States. So they did include public meetings in different parts of the country, and meetings with officials from the States.

We met with officials from the States.

Senator DOMENICI [presiding]. You heard him say how few opportunities the people had to attend meetings and listen and object and to address that specifically.

Mr. KOLEVAR. I believe in the early formulation we proposed three public meetings. In response to requests that we got from Senator Casey and others we more than doubled that to seven public meetings. But, Senator Domenici, I think the most significant thing we did in response to the concerns that we were receiving was to insert an added step, which admittedly inserted an additional 6 months of consideration into the designation process.

That was that the Secretary decided to issue these designations in draft form, not called for by the legislation. It was certainly within his authority to simply make the designation as he saw fit in and consistent with the study back in May.

Senator DOMENICI. Right.

Mr. KOLEVAR [continuing]. Of 2007. We believe that, we hope that, that demonstrated our commitment to having the public see what the thought process of the Department of Energy was and it certainly allowed for additional comment. We did receive a great number of comments.

Senator DOMENICI. Yes.

Mr. KOLEVAR. At the end we were guided by the information that we had received largely in the congestion study. In that congestion study we relied, overwhelmingly, on existing bodies of work. In the West we relied on WECC's analysis for determining where congestion was.

Senator DOMENICI. Ok. I got it.

Mr. KOLEVAR. So we went with those corridors finally.

Senator DOMENICI. Now the draft clearly was, as I understand it from you, and I tend to agree, was an opportunity to truly give ev-

everybody that had representation and that has a proprietary interest or future proprietary interest. They all saw what you're trying to do. Yet you hadn't finalized it. So they could comment on it, right?

Mr. KOLEVAR. Yes, sir.

Senator DOMENICI. So he and his constituents of the good Senator had that draft and it was nothing more than that.

Mr. KOLEVAR. Yes, sir.

Senator DOMENICI. Clearly designated draft so they knew it. They responded knowing it was a draft. Is that right?

Mr. KOLEVAR. Yes, sir with an additional comment period inserted.

Senator DOMENICI. Right. What is your response to this, Mr. Chairman?

Mr. KELLIHER. Yes, sir. First of all I do think Senator Casey's criticism with respect to arrogance of Federal agencies doesn't extend to FERC. He disagrees with how we've interpreted the siting rule.

Senator DOMENICI. That's true.

Mr. KELLIHER. But we have no transmission siting proposals in Pennsylvania pending before the Commission, no pre-filing, no formal applications. But we have committed to the Senator that if there were a filing in Pennsylvania we would hold multiple community meetings depending on how large the project is. But in our meetings in other States, when DOE finalized its corridors, we offered to meet with every State official in the designated corridors with Governors on down State commissions to explain our process.

In those meetings and some community meetings, actually some community leaders thought that the Federal process was—they had a larger role, a greater ability to participate in the Federal siting process than they did in their State process, not Idaho, just want to add because there is no corridor in Idaho. So Idaho law I think probably works great. So I think—

Senator DOMENICI. Ok, let me finish here. I don't want to take any more time. I just want to say when we did this. When we wrote this law, somebody, I don't know if it was one of us.

But somebody mentioned that what we would probably see was just because this backstopping authority was put in the law that we would see some additional, you know, others would reach agreement because they didn't want the feds to get involved. That it would cause action. Is that happening? The fact that this is in the law. Are deals being made? Are agreements being made rather than let you all get involved, others are saying let's get it done?

Mr. KELLIHER. I'd say that's still an open question.

Senator DOMENICI. Ok.

Mr. KELLIHER. But I think it might be resolved satisfactorily. We are seeing projects particularly in say, the Mid-Atlantic region that we haven't seen in 25 years. We are seeing some serious consideration at the State level.

So I think it's possible that the prospect of Federal siting might expedite State consideration and focus State consideration.

Senator DOMENICI. My last question. When we were writing this we had been hearing about situations within the grid where we

have a big grid failure. We were saying what we produce now, there should not be grid failures.

With reference to your work in getting the reliability standards put in place, etc. What would you say to us now about the expectation of grid failures? Have they been minimized by what we've done?

Mr. KELLIHER. I think the risk has been minimized or at least if there's a failure that's caused by violation of a standard there will be consequences this time. In the past we've seen eight large regional blackouts caused by violation of voluntary reliability standards.

Senator DOMENICI. Gotcha.

Mr. KELLIHER. I can't promise mandatory standards mean that there will never be violations. We do have a large number of violations pending. But if there's a blackout caused by violation of standards there will be consequences this time.

Senator DOMENICI. They seem to know that.

Mr. KELLIHER. Yes, sir. I think we're in a better position. It's almost 5 years ago that we had the August 14, 2003, blackout. Whereas I think the grid is in better condition than it was then. Now it is protected by mandatory reliability standards.

Senator DOMENICI. Thank you very much.

The CHAIRMAN [presiding]. Senator Craig.

Senator CRAIG. Thank you, Mr. Chairman. Senator Murkowski has just come into the room. She and I, I say this to our panelists and to the committee, just had a fascinating experience in France looking at nuclear facilities. Many of this committee has done what we did.

Looking at reprocessing, looking at the construction of the new reactor generator, looking at enrichment facilities, we saw a lot of concrete, some interesting buildings and some fascinating processes. But I think the thing that fascinated me the most and both Lisa can speak for herself. But I saw her engaged in a similar kind of questioning was how the French have become so successful in working with their communities of interest to do what they do to become 80 percent nuclear at a time when we were fumbling and stumbling and all but lost in industry.

It became very clear over a period of time how they do it. There's tremendous openness and transparency in their processes both with their quasi, Federal, private companies and their Federal entities. There's a very aggressive outreach.

But as it relates to the publics involved. I found that quite fascinating and a very valuable model, obviously because of their success rates. Only that when we were coming out of the north, the train was stopped because the greens were protesting nuclear. But other than that, it was a great trip.

So when I'm sitting listening to Senator Casey this morning, that's the kind of thought that goes through my mind. Was there enough of an openness, a transparency of process or an understanding of process, especially if it's new that we go through. Is a corridor a grid or is a corridor a siting? Is a corridor a siting of a given line in a given location? No.

But it certainly is an area in which that activity can go on. I'm pleased the chairman is focusing on this with Senator Casey to

make sure we get it right or it gets better. Because we've just come out of an experience, both the Senator and I have, where obviously something over there is going well or better than we've been able to do it in the past.

Let me ask a couple of questions. Marsha, obviously your frustration as is mine still with Federal entities and in land locked States oftentimes of the kind we have, when you like to draw straight lines from point A to point B which are the most efficient. All of a sudden you're passing over hundreds of miles of Federal land.

All of the stakeholders of interest that are out there along with oftentimes the rigidity of Federal agencies to move in a timely fashion. So I think your suggestion about stopping the clock, if it's a federally provoked time problem, has some strong legitimacy to it. Let me ask you this question because in the West now one of our siting problems is the connectivity.

First of all, the locating and then the connectivity of wind, much of the best wind location in the West happens to be on Federal lands. So I guess I would ask you this question. What could we do here that would have the biggest impact on, not just solving the problem of transmission, problems on the Federal lands, but also the locating of a wind facility and then the connectivity of it through transmission?

Should we be allowed to use similar kinds of approaches in that kind of siting that we might be able to use or we do use in transmission? I'm talking farm verses connectivity, the transmission for wind.

Ms. SMITH. As you may be aware the Western Governors' Association has a project called WREZ, of course everything is reduced to an acronym, WREZ, the Western Renewable Energy Zones.

Senator CRAIG. Yes.

Ms. SMITH. They're trying to identify the most productive wind zones in the West and hope that that gets incorporated into transmission planning that is going on all over the West so that those transmission lines can run in a way that would, excuse me, accommodate these renewable energy zones.

Senator CRAIG. Um hmmm.

Ms. SMITH. I think that's a hopeful and useful process. You're right when you have a State that's what, 65 percent federally owned. You can't build anything without crossing some Federal lands. So I think we need to make it possible for those Federal land management agencies through appropriate staffing and funding to be part of that process in identifying those.

I would also say that for our State, we have an organization called NTTG, the Northern Tier Transmission Group.

Senator CRAIG. Right.

Ms. SMITH. Which are the States of Montana, Wyoming, Utah, Idaho and Oregon. Because we have a serious need for transmission to solve our congestion from East to West. We're very hopeful that that process which includes officials from all the States as well as the industry will yield fruit in terms of actual lines on the ground.

Senator CRAIG. My time—

Ms. SMITH. I think the renewable issue will be considered in that, also as they do their planning studies and their implementation.

Senator CRAIG. Thank you. My time is up.

The CHAIRMAN. Senator Bunning.

Senator BUNNING. Secretary Kolar, how is DOE working with the States within the affected transmission corridor regions to address all their concerns? We've heard from Pennsylvania. Will these concerns be taken into consideration, particularly when you release your next national electric transmission study in August 2009?

Mr. KOLEVAR. Senator, we do pay very close attention to the comments that we receive. I should note that similar to FERC's actions, after the Department released its draft in May 2007. We proactively reached out to all of the Governors, all of the congressional delegations, the State public utility commissions and solicited their input on this so that we could hear from them and give them the opportunity to communicate to us what their constituents felt about the corridor as it currently existed in draft form.

I do have to say that I do disagree with some of the points that the Senator raised earlier with respect to the overall effect of these—

Senator BUNNING. Will that all be included in your report in 2009?

Mr. KOLEVAR. It probably will not. But the reason for that, Senator is the law as established, really set up, a two part process. In part one the Department conducts a congestion study, speaking to the state of congestion across the Nation. We have to do that every 3 years.

The second part of that is a report that the Secretary must produce based on that study in which the Secretary may or may not designate corridors. So while we are required to do the 2009 study. Indeed, we began it months ago, so that we—

Senator BUNNING. We being the Department of Energy?

Mr. KOLEVAR. The Department of Energy. Yes, sir.

Senator BUNNING. We may not be you.

Mr. KOLEVAR. Yes, sir, that's correct. Right. It certainly will not be.

Senator BUNNING. The Department of Energy being the responsible entity.

Mr. KOLEVAR. That's correct. The Department of Energy on its current track will produce, consistent with the law, the report, and the congestion study in August 2009. That will make no determination with respect to any future corridors. That will be entirely within the purview of the next Secretary of Energy. In the study that follows that report which the Secretary will be required to do by law. That Secretary will then speak to the issue of future corridors, the impacts, the benefits, if they choose to put new corridors into place.

Senator BUNNING. Ok. First of all I want to be very clear about this. I support efforts to expand wind and solar energy where it makes economic and logistical sense.

However I am not naïve. The wind does not always blow. The sun does not always shine.

In times like these I believe it is critical that our Nation's electric grid have a backstop to ensure generation does not cease due to weather conditions. We have a storage problem, obviously with wind energy. We have a storage problem and what I'd call a problem with the overall solar ability to produce enough electricity to make it viable, in other words, the technology of that.

Mr. Kolevar, would you agree that until renewable energy can be stored at levels that meet all demands of our utility grid, our Nation would be wise to invest also in other advanced energy infrastructure, like new coal plants and new nuclear plants that would meet future demands, no matter what the weather forecast is?

Mr. KOLEVAR. Yes.

Senator BUNNING. Yes.

Mr. KOLEVAR. Yes, sir. Absolutely.

Senator BUNNING. Ok. Thank you. That was an easy question. Too easy.

[Laughter.]

Senator BUNNING. I would yield time.

The CHAIRMAN. Thank you very much. Let me go ahead and call on Senator Murkowski who has been waiting here and then Senator Menendez after that. Go ahead.

Senator MURKOWSKI. Thank you, Mr. Chairman. I want to thank you for hearing today. You know, as we talk about our energy solutions. We rightly get excited about the future of renewables, whether it's solar, whether it's wind or geothermal or biomass. It's all great.

We all want to get there. But as my colleague has just mentioned the sun doesn't always shine. Wind doesn't always blow. It doesn't always shine and blow where the people are.

So the issue of transmission, we just simply cannot be talking about renewables in isolation. We have got to be talking about the transmission component when we talk about the future of renewables and allow the consuming public to understand that we can give it to you, cleaner.

We can give it to you sustainably and renewably. But in order to get it to you, unless you happen to live right underneath that wind generation unit. We've got to have transmission capacity here.

We don't like to talk about that because it's not nearly as interesting as the technology for wind and solar and geothermal. Getting it to your home is not very sexy. Yet, that's really what we've got to reckon with. So I appreciate, again, Mr. Chairman, the spotlight here.

Commissioner Kelliher, thank you for being here to testify. I also want to thank you for your recent visit up to the State. My only regret was that you got to go to some pretty incredible places that I wasn't able to join you and to give you a more personal tour of some of the great opportunities that we have in Alaska when it comes to our energy sources. But again, I appreciate your visit.

I also recognize that you have given up personal time with your family to be here with us today. I greatly appreciate that. We give up a lot for our jobs and when it cuts into that family time, again, I just want to thank you for your sacrifice there.

I want to ask you a pretty general question here this morning and recognizing that FERC has proceeded with designating the two national interest transmission corridors. Given though the power needs that we have here in the Congress, do we—not in the Congress, in the whole country, but do we here in Congress need to go back and revisit the terms of EPACT? Rather than reduce the authority of the FERC, actually increase it to make it easier to allow for the transmissions to be sited in a more timely manner?

We've got two different ways to go here. But as I mentioned in my brief comments, we've got to figure out the transmission aspect of it. What does the FERC need, more or less?

Mr. KELLIHER. I respectfully suggest more. I do think that the transmission siting provisions of the Energy Policy Act are an improvement over the status quo, but they might end up being a very modest improvement. I think DOE has very carefully implemented the law. They've done their part designating corridors.

But in part from the way the statute is written, they have designated corridors to date in areas where there is very clear existing congestion.

Senator MURKOWSKI. Right.

Mr. KELLIHER. I look at the situation in the upper Midwest where you—there's a tremendous amount of wind potential in the upper Midwest and a relatively weak grid. The market for the wind potential in North Dakota and Western Minnesota is not North Dakota and Western Minnesota, it's the Midwest, it's the Mid-Atlantic, it's perhaps New York. So it's a very broad regional market.

Right now there isn't congestion because that wind potential hasn't been developed. So DOE, I think has concluded that it's not clear that they, I'm not going to say you can't as a legal matter. But I think they concluded it's not clear that they could designate a corridor to prevent the creation of congestion. They've so far created designated corridors to address existing congestion.

Now I think if you look at wind. I've used the gas analogy. You can look at wind potential almost like gas reserves. Potential in gas reserves are where nature has endowed certain areas. It's where the potential is, not where you might prefer it to be.

Now you see people going to the Rockies right now exploring and producing natural gas even though they know there are limits on the take away capacity, the pipeline take away capacity. Because they know that pipelines will propose new projects to increase the take away capacity. They are very confident that FERC has the ability to approve those pipelines, the expanded take away capacity.

That's a very different situation with respect to wind potential. It might take 2 years to build a wind facility. But if it takes 10 years to expand transmission so that that wind can get to market, the wind is not going to be built in the first place, I believe.

So you have a great disconnect on power between the very rapid ability of wind to enter, but the very limited ability to take that generation away from the relatively remote areas where there's the best wind potential in the country. That's one reason I think the situation has changed since 2005.

You've seen a host of State renewable portfolio standards enacted. You've seen the country really shift ground on climate

change. I think those are two very significant events that have occurred over the past 3 years that I think do suggest that Congress should revisit the decisions with respect to grid siting.

Senator MURKOWSKI. Mr. Chairman, may I ask a very quick follow onto Mr. Kolevar? This relates to the DOE study regarding the existing constraints and the congestion that Commissioner Kelliher has mentioned. In that study can you look at the adequacy of transmission capacity and does that count as a constraint to be considered?

Mr. KOLEVAR. Yes, Senator.

Senator MURKOWSKI. Ok.

Mr. KOLEVAR. In the report that the Secretary released following the congestion study the Department did indicate that it considered a lack of transmission to be a constraint.

Senator MURKOWSKI. Ok.

Mr. KOLEVAR. So the Department does believe that it would be within its authority to designate a corridor based on that lack of transmission. We chose not to do that in this first instance because this was the first time this kind of authority had ever been exercised. To the best of my knowledge there is no analogous authority in government.

So we were designing and building at the same time. We felt it would be most appropriate with this first designation to be conservative in nature. I understand that Senator Casey and others don't believe that that's an apt characterization.

But we do believe that it is. That is was conservative. We went where everyone understood that significant congestion existed. We addressed that first.

Personally I would hope the next Administration would look to be expansively consistent with the Secretary's study and consistent with the chairman's remarks.

Senator MURKOWSKI. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Domenici.

Senator DOMENICI. Mr. Chairman, before we proceed to your cycle, could I just take 1 minute. I have to leave and I just want to make one observation. Then talk to you, Mr. Chairman.

First of all, I do think every now and then you're privy up here to passing the law. You are still around when you see some real effects. So I was just telling our chairman that as of yesterday there are 16 complete applications, applications for design and location and construction, of 16 new power plants, nuclear. They're all construction permits.

In some instances they are more than 1,000 megawatts so it might be that those 16 are perhaps as much as 20,000 megawatts. That's from zero before we passed the law. So there's got to be some enjoyable cause and effect for a change.

But Mr. Chairman I wanted to ask you about the concern you have that the non-congested areas might not be the subject matter of consideration for grid addition under the existing law, that we perhaps didn't put enough authority in. If so, it ought to be considered. But I would ask isn't it apt to be easier to site the electric lines or transmission lines, excuse me, in the areas you're alluded to as perhaps being not included.

Won't it be easier in the non-congested areas to get a designation then in congested areas?

Mr. KELLIHER. I do think in those areas there is a lot of support and North Dakota certainly for development of wind potential. I think there's support for siting. I think the State has indicated they're generally supportive of major transmission projects.

There has been difficulty in the past.

Senator DOMENICI. In Texas, same thing.

Mr. KELLIHER. Yes, sir.

Senator DOMENICI. That's where a lot of it's going to be already on because there's money there.

Mr. KELLIHER. Yes, but the upgrades may extend outside of North Dakota. If North Dakota is supportive of major transmission projects to get North Dakota wind to other broader markets there may be need for upgrades outside of North Dakota. Then there might be siting problems outside the State.

Senator DOMENICI. Thanks.

The CHAIRMAN. Thank you.

Senator Menendez.

Senator MENENDEZ. Thank you, Mr. Chairman for holding an important oversight hearing at the request of myself and 14 other colleagues who now represent 51 million people who really find themselves with very little say in this process. I look at this corridor, Mr. Chairman. The entire State of New Jersey, not part of it, but the entire State of New Jersey is designated as a corridor. Now that's just simple unacceptable and it's unconscious able.

Mr. Kolevar, let me ask you. New Jersey has a master energy plan to solve its congestion problems with energy efficiency, with demand response, with new local generation. Now EPACT 2005, a law that gives the Department the power to set up these corridor States, that you must take into consideration what interested parties desire. It also requires you to take into account other alternatives to relieving congestion.

Yet when I look at having the entire State of New Jersey in your corridor it seems to me that what we have is a highway for dirty coal electricity to make its way into my State. So what is it that you did in pursuing your congressional mandate because we believe that you have ignored the interest of the Mid-Atlantic States as expressed by their elected representatives, as expressed by their utility regulators, as expressed by what even some of the very utility companies themselves? So what is it that you do and you did in pursuing the congressional mandate that you have in considering what the interested parties desires were?

Mr. KOLEVAR. Senator, the Department of Energy considers the corridor designation to be problem identification. In designating the corridor that covers New Jersey, we believe that the use of transmission to address the very severe congestion problems that you have in the northern part of your State is now a tool in your State regulator's tool box that perhaps they didn't have before because they couldn't guarantee that if they wanted to build a line through Southern New Jersey—

Senator MENENDEZ. You're not answering my question.

Mr. KOLEVAR. I'm trying.

Senator MENENDEZ. I don't want to have my time eaten up. The bottom line is I had asked you what you think you gave them as a tool box. I'm asking you what in fact you did in pursuit to the congressional mandate that says you have to take into account and including alternatives for the interested parties. Certainly New Jersey, you've covered New Jersey in this corridor as an interested party I would hope.

Mr. KOLEVAR. Sir, we consider all alternatives and frankly want all alternatives to transmission.

Senator MENENDEZ. What alternatives did you consider in this case?

Mr. KOLEVAR. But the Department does not consider the legislation to require the Department of Energy—

Senator MENENDEZ. It does not?

Mr. KOLEVAR. The legislation requires the Department to consider alternatives to designation. We interpret that as no designation or different types of designation, different bodies of areas to—

Senator MENENDEZ. I think the intent of Congress is pretty clear. It says the Energy Policy Act 2005 says that the Energy Secretary will designate national interest transmission corridors, and I quote, "after considering alternatives."

Mr. KOLEVAR. Right.

Senator MENENDEZ. Now, what are the alternatives you considered?

Mr. KOLEVAR. Whether or not the designation and—

Senator MENENDEZ. With the stakeholders.

Mr. KOLEVAR [continuing]. The size of the corridors that you might designate if you choose to. Senator—

Senator MENENDEZ. So you only considered the size of the corridor, not other alternatives?

Mr. KOLEVAR [continuing]. Or the applicability. If the Department—

Senator MENENDEZ. Will you send to me in writing all of the alternatives that you considered prior to making this decision?

Mr. KOLEVAR. We will respond in writing. Yes, sir.

[The information referred to follows:]

In its National Electric Transmission Congestion Report and Order (72 FR 56992, Oct. 5, 2007), the Department addressed the requirement in FPA section 216(a)(2) that calls for the Secretary to consider "alternatives and recommendations from interested parties" before making a National Corridor designation.

The Department concluded that, given the overall statutory framework, the term "alternatives" in section 216(a)(2) was intended to refer to comments suggesting National Corridor designations for different congestion or constraint problems, comments suggesting alternative boundaries for specific National Corridors, and comments suggesting that the Department refrain from designating a National Corridor. A detailed discussion of the Department's reasoning for this interpretation can be found in the Report and Order at 72 FR 57010. This specific text is on the attached sheet. Although this discussion is in response to comments on the designation of the Mid-Atlantic Area National Corridor, the Department also applies this reasoning when responding to comments on the designation of the Southwest Area National Corridor at 72 FR 57018.

F. Consideration of Alternatives Under FPA Section 216(a)(2) . . .

DOE RESPONSE

The Department concludes that consideration of non-transmission solutions to the congestion problems facing the Mid-Atlantic Critical Congestion Area is neither re-

quired nor necessary as a precondition to designating the Mid-Atlantic Area National Corridor. FPA section 216(a)(2) calls for the Secretary to consider “alternatives and recommendations from interested parties” before making a National Corridor designation. The statute, however, does not specify what the term “alternatives” refers to. Numerous commenters would have us interpret the phrase to mean alternative solutions to congestion or constraint problems, which would then necessitate a comparison of non-transmission solutions against transmission solutions. Nothing in the plain language of FPA section 216 requires or suggests such an interpretation.

As discussed in Section I.A above, the very structure of FPA section 216 indicates that the Department’s role is limited to the identification of congestion and constraint problems and the geographic areas in which these problems exist, and does not extend to the functions of electric system planners or siting authorities in evaluating solutions to congestion and constraint problems. Even the statutory requirement to consider alternatives is not couched in terms of an independent analysis of a reasonable range of alternatives, as one would expect if Congress had intended the Department to analyze and select a solution, but rather refers merely to the Department considering those alternatives and recommendations offered by interested parties. The Department believes that expanding its role to include analyzing and making findings on competing remedies for congestion could supplant, duplicate, or conflict with the traditional roles of States and other entities.

Not only does the statute not require the Department to analyze non-transmission alternatives, such analysis is also not warranted as a matter of discretion. The primary concern of those arguing for analysis of non-transmission solutions to congestion or constraints is that National Corridor designation disadvantages those solutions, and thus, according to these comments, the Department should only make such a designation where it has determined that transmission is the best solution. As discussed in Section I.A above, the Department sees no basis to conclude that designation of the Mid-Atlantic Area National Corridor would either prejudice State or Federal siting processes against non-transmission solutions or discourage market participants from pursuing such solutions.

The Department concludes that the phrase “alternatives and recommendations from interested parties” as used in FPA section 216(a)(2) is ambiguous. For the reasons given above, the Department declines to interpret the phrase to mean non-transmission solutions to congestion or constraint problems. The Department believes it is more appropriate to interpret this phrase in a manner that recognizes the statutory limits on DOE’s authority. Upon completion of a congestion study, the statute gives the Department two options: Designate one or more National Corridors or do not designate any National Corridors. In light of this statutory framework, the Department concludes that the term “alternatives and recommendations from interested parties” was intended to refer to comments suggesting National Corridor designations for different congestion or constraint problems, comments suggesting alternative boundaries for specific National Corridors, and comments suggesting that the Department refrain from designating a National Corridor. (72 FR 57010, October 5, 2007).

Senator MENENDEZ. Let me ask you this. It seems to me that this is a corridor for dirty coal energy. We already have clean air action challenges. We have our own programs in New Jersey as to how to achieve this.

How is this not just about coal getting to the East coast in terms of energy production?

Mr. KOLEVAR. Senator, it is not the responsibility of the Department of Energy to determine what kind of generation resource will send electricity into a State. That is within the purview of the States. To the extent that there’s an expectation that the Department would consider alternatives as included in the statute to speak to other forms of generation, then you are setting up a situation where you potentially have the Department of Energy truly impinging on State sovereignty by determining what the generation mix will be in that State.

Senator MENENDEZ. There’s no doubt that this is about coal at the end of the day getting to the East coast.

Mr. KOLEVAR. Sir, the fuel mix in the United States over the next 20 years will be determined by Federal policies and statute regulations, State policies and regulation. It should not be determined by the Department of Energy—

Senator MENENDEZ. I find it hard to believe that this designation has to do, you know, to suggest. I think in some of your earlier testimony you mentioned something about wind. I really find it hard to believe that megawatts of power presently being generated by wind in the Midwest and not gigawatts being generated by coal is what's at stake here. I find it very hard to believe.

Let me ask one last question, if you can, Mr. Chairman with your indulgence. Commissioner Kelliher, the Department of Energy has claimed that in other venues that the designation of the national corridors doesn't really actually do anything. That was in my mind their excuse for failing. I wait to see the written response.

But for failing to examine alternatives and that was their reason for not conducting environmental impact assessments. Instead they claim that FERC is going to consider alternatives in evaluating transmission projects under section 1221 of EPACT 2005. I'd like to understand FERC's approach.

Mr. KELLIHER. You want me to revisit DOE's conclusion or you want me to discuss how FERC would proceed if—

Senator MENENDEZ. How FERC would proceed.

Mr. KELLIHER. First of all I just want to point out we've gotten a grand total of zero applications to site transmission anywhere in this country. So this is a hypothetical. I can't tell you what we have done because there have been no applications.

But we have offered to meet with every State official. I think we've met with New Jersey officials on how we would proceed under our rule if we were to actually get applications to site transmission. Our approach would be modeled very closely on how we've built pipelines. FERC has had exclusive authority to site pipelines for 60 years, for more than 60 years.

First thing we would do is hold community meetings. The bigger the project, the more meetings we would hold. We would certainly look at route changes. That's one benefit of the approach that DOE took to have a broader corridor.

If instead of that—and I'm from New Jersey, so I'm sympathetic to the whole State.

Senator MENENDEZ. I hope you remember that.

Mr. KELLIHER. I do remember that. But if instead of a broad corridor, DOE had a thin pencil line across New Jersey and Pennsylvania, they would be choosing the route. Our role would be limited to yes or no.

Now I've asked FERC's staff can they find a pipeline over the past 60 years where we haven't made a route change. They have been unable to find a pipeline. We make route changes to save the trees on an individual land owner's home.

So I think DOE preserved our ability to make route changes. We do so to choose a route that is more environmentally benign. So we would hold community meetings. We would consult with State officials. The inception if we were to get an application at the beginning of a FERC proceeding does not cutoff the State proceeding.

If ultimately the State sited transmission there's a very high probability we would terminate our proceeding. So the beginning of a Federal process doesn't cutoff the State process. We actually have not exercised our full authority under the Energy Policy Act.

The law that Congress enacted 3 years ago, provided that FERC could make a final decision 366 days into a State proceeding. The limitation, the 1-year limitation was on the end of Federal proceeding. We imposed a 1-year bar on the beginning of a Federal proceeding because we wanted States to have a clear year to make decisions on siting transmission.

We could have done the complete opposite and allowed parties to come to FERC and States the exact same day to file simultaneously in both fora. We'd have to wait 365 days. On day 366 we—

Senator MENENDEZ. Let me because I've overstayed my time. But Mr. Chairman this was such a major issue for us, let me close by saying this. It is counter intuitive. I know a lot of my colleagues here in the Senate have talked about property rights. We'll see if all of a sudden all of those who have been advocates of property rights are willing to snuff it out.

It's counter intuitive to say, give me the whole State in the corridor because this way I'll narrow my focus. It's like saying give me big, you know, a big blank check to Fannie Mae and Freddy Mac because hopefully we won't have to use any part of it. It's counter intuitive.

So, you know the reality is that, you know, I hope that FERC is going to, when and if it gets its application among the other things you've said, is going to consider environmental impacts. I hope it's going to look at the greenhouse gas emissions in evaluating those proposals. I hope it's going to work with the State in addressing siting and environmental obstacles because as far as I'm concerned this isn't over.

I do hope, Commissioner, that you will remember the State that you came from and how we don't want it to be one big grid of coal fired emissions in a State that already has far too high an incidence of cancer as a result of the type of emissions that are taking place there. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much. We have another panel.

Senator BUNNING. May I?

The CHAIRMAN. Yes, Senator Bunning.

Senator BUNNING. Thank you. If the Senator from New Jersey is concerned about the corridor and the electric generated by coal which is about 50, 51 percent of all electric generation in the United States of America today, I suggest to the Senator that he pass—he's got a Governor who agrees with him, I know. I suggest to the Senator that he would refuse to accept any electric generated by coal in the United States that is going through New Jersey. That he replace that with some alternative fuel presently, that generates electricity like natural gas, like biomass, like wind, like whatever alternative he may choose.

Senator MENENDEZ. I appreciate the advice of the Senator from Kentucky. The fact is only 12 percent of energy in New Jersey is generated by coal. Under the Governor's plan we would move to a point in which we would move away totally from that. So we're, of course—

Senator BUNNING. I think that's a great idea.

Senator MENENDEZ. I appreciate the Senator from Kentucky's—I know he's a big property rights advocate. I'm sure that he'll look at that as one of the issues in moving forward.

Senator BUNNING. I am and I will do that.

The CHAIRMAN. Let me thank this first panel. It's been very useful testimony, and we appreciate it. Let me just mention, Chairman Kelliher, I do know you've had to cut your vacation short to be here for this hearing. We very much appreciate that inconvenience that you suffered.

Let me ask the second panel to come forward. I'll go ahead and introduce the second panel as they're taking their seats.

We have the Honorable Jim Hoecker, who is here today representing WIRES, which is, I understand the working group on investment in reliable and economic electric systems. Thank you for being here, Jim.

Colin Whitley is representing the American Public Power Association from Wichita, Kansas.

George Loehr is from Albuquerque, New Mexico, here representing the Piedmont Environmental Council. I believe he's here. At least, I was told he was.

Terry Boston is here with PJM Interconnection out in Norristown, Pennsylvania.

Susan Tomasky is here representing the American Electric Power out of Columbus, Ohio. Thank you for being here.

Why don't we just start with Commissioner Hoecker and we're glad to hear your testimony. We'll do the same here that we did with the first panel. That is include your full statement in the record as if read, but we would appreciate it if you could take five or 6 minutes and just summarize the points you think are most important for us to understand. Jim, go right ahead.

STATEMENT OF JAMES J. HOECKER, COUNSEL TO WIRES

Mr. HOECKER. Thank you. Thank you very much, Mr. Chairman, members of the committee. It's a pleasure to be here.

I certainly appreciate your shining a light on a critical issue. This committee did great work in 2005 and last year in improving the prospects of electric transmission and the industry as a whole. We look forward, WIRES does, to working with the committee in the future.

WIRES for your information is the national coalition of transmission providers, transmission users, service companies, both investor owned, publicly owned, cooperatively owned. Our purpose is really to promote transmission investment as appropriate. Transmission, of course, is as you've heard over and over this morning is a shared network.

It's a public good. It's the electron superhighway. It provides tremendous optionality in terms of availability of various generating resources and a fluid commerce in electricity at the wholesale level.

We believe that this country needs to take a serious look at constructing considerable amounts of additional transmission over the next 30 years. But because cost allocation is controversial, because siting transmission towers is difficult and never easy and never brief either, because recovery of costs at both the Federal and State

level tends to be uncertain. Certainly transmission development needs to be done well.

I think whichever side of the debate you're on about national interest corridors, I think it's fair to say that everybody wants to ensure that the public will be heard and the planning is done on a regional basis and done with a great deal of care. The needs and the challenges that transmission face now are tremendous. This is perhaps a transformative moment in the history of this industry.

Not only are we dealing with eliminating congestion, replacing aging infrastructure, dealing with the stresses that competitive markets put on the transmission system and making up for a lack of investment over the last 20 or 30 years and anticipating significant increases in demand for electricity. We're now looking at the prospect of major climate change initiatives that will require cleaner energy, renewable portfolio standards that will place a premium on renewable energy and connecting alternatives that are frequently very distant from load.

We're trying to make more sufficient use of generation by high cost fuels. So, Commissioner Smith was absolutely right transmission is not about what it's in the past, but where we're going. I just want to make two comments this morning about that.

On the issue of cost allocation, I would draw your attention to the Blue Ribbon Panel Report that was attached to my testimony. WIRES commissioned this report last year. It's a very common sense approach to allocating costs, a principled approach to allocating costs to those who benefit.

I think in this era of open access transmission and large regional bulk power markets that the panel concluded that we needed to look at broader allocations and do more socialization of cost. But this is not a doctor on their thesis on an Appalachian for socializing cost. But there are principles here that are not being followed, specifically by FERC or other parties in the regions. We would recommend that they try to take a more principled approach to allocating costs.

Last the whole issue of infrastructure corridors. We give the Department of Energy great praise for making this courageous designation. I think they did a fine job. I think they could have done it more quickly.

The important thing is that the DOE's approach and the statute itself is like looking in the rear view mirror. We're looking at past congestion on the grid. We need to be looking forward to economic development, energy security, connecting up renewable energy remote location restrained resources.

The corridors don't really do that. Even though DOE probably could have, I think, construed the statute as requiring it to do that. It chose not to.

So the corridor process is not only limited in its implications. It's far too limited to be very useful going forward with regard to these kind of transformative events that we're looking at. FERC has been at great pains to encourage States to use their proceedings to site transmission so that these things don't end up on their doorstep.

So I'm not quite sure why Senator Casey thinks that the citizens of Pennsylvania have been run over. But I absolutely agree with him that that's an unacceptable result. That's why we urge re-

gional planning, stakeholder input. FERC has set the table in order 890 for an open, transparent, transmission planning process in every part of the country. Now that they've set the table, we need to have the meat and potatoes to go along with it.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Hoecker follows:]

PREPARED STATEMENT OF JAMES J. HOECKER, COUNSEL TO WIRES

Senator Bingaman and Honorable Members of the Committee, my name is Jim Hoecker. Thank you for the opportunity to testify this morning on the current status and future of the electric transmission system. I am especially honored to have the opportunity to return before this Committee for the first time since my service on the Federal Energy Regulatory Commission ("FERC").

Today I appear before you as Counsel to WIRES, the Working group on Investment in Reliable and Economic electric Systems. WIRES is a new national coalition of both publicly-owned, investor-owned, and cooperatively-owned transmission providers, customers, and services companies. To my knowledge, WIRES is the only private sector group exclusively dedicated to promoting investment in the electric transmission system and educating policymakers and the public on the benefits derived from the grid.

WIRES was formed in part to remove electric transmission investment from the shadow cast by competitive markets and competitive generation over energy policy conversations and to emphasize that, even though transmission providers have been skilled in finding ways to serve larger and more distant loads utilizing their existing assets, the need for more transmission is real. When the transmission systems became more fully integrated a half century ago, we had no plasma TV's or energy-hungry computers; no one seriously conceived of the possibility that automobiles would be plugged into the electric system; large-scale regional bulk power markets were only a blip on the horizon; few people were concerned about the consequences of greenhouse gases in the atmosphere; and extensive deployment of "location-constrained" wind, solar, biomass, or geothermal technologies for electric generation—not to mention low-carbon forms of coal generation—was a fantasy.

Transmission providers now find themselves playing catch-up. We do so while facing growing challenges: a level of competitive commerce that tests the limits of the grid's capabilities; persistent transmission constraints in many areas; a projected one-third increase in electricity demand by 2030, on top of a 34% increase in demand between 1992 and 2007; and the practical challenge of linking major renewable and low-carbon resources to consumers many hundreds of miles away. Transmission expansion has naturally become a priority for the renewable energy industry and for states with renewable portfolio standards. In addition, technologists have discovered transmission's critical importance. For instance, Andrew Grove, former CEO of Intel Corporation, recently observed that "[m]ost everything runs on electricity. A big exception is the transportation sector. . . . If we don't convert a large portion of the transportation sector to electricity, we cannot make real progress toward energy resilience." Such a transformative switch to plug-in vehicles would compound the challenge of satisfying the consumers' escalating demand for electricity and necessitate a stronger transmission system to deliver power on demand. By expanding the high voltage "backbone" network and ensuring that it becomes a "smart grid," we can empower consumers to control their own carbon footprint, enable companies to make optimal use of existing assets, and help drive energy efficiency and demand response.

Mr. Chairman, we need a strong electric transmission grid to be on the Nation's list of top priorities for investment in infrastructure. I do not know whether commentators like David Brooks are right in anticipating that this will be an era of "epic legislation," but I agree with him that energy and infrastructure must be two of our top national priorities. The future of the grid is an important part of that policy discussion. America's competitiveness and the success of public and private efforts to promote clean energy resources and curb greenhouse gas emissions will depend in part on upgrading and expanding the transmission grid. While the Energy Policy Act of 2005 provided a necessary push in the right direction in the form of financial incentives, infrastructure corridor designations, and regulatory coordination, Congress, federal and state regulators, and other policymakers must maintain this new focus on the state of the Nation's grid, which is after all among the most complex machines ever built and one on which the Nation depends every day.

My testimony this morning describes WIRES' most recent work on transmission. Most notably, WIRES commissioned a "White Paper" from an independent Blue Rib-

bon Panel to ascertain what disinterested experts would find is the best way to determine who should pay for expansions of the grid in most circumstances. That paper is attached to my testimony.* WIRES also participated in the Department of Energy (“DOE”) proceedings that resulted in the first National Interest Electric Transmission Corridors (“NIETC”). I discuss our views in support of that initiative and our doubts about its long-term success. Finally, WIRES conducted a brief examination of the factors which are escalating the cost of developing new transmission facilities. It conveys the urgency of moving forward in developing the grid. It too is attached.*

I also wish to mention another WIRES report that will be forthcoming in about six weeks. It will identify the “best practices” for integrating location-constrained clean energy sources, especially wind power, into the grid. WIRES is currently examining how several states have gone about integrating wind and other location-constrained resources into the existing grid. The states of Texas, California, Colorado, Minnesota and others have developed and implemented renewable energy “zones” and operational and regulatory protocols for moving those resources to market. WIRES believes we will all learn from having this information and these experiences distilled in one place. We will ensure that you receive copies.

WHO PAYS FOR REGIONAL TRANSMISSION PROJECTS?

Transmission today operates in a new and challenging environment. The highly balkanized wholesale power markets of the past, which consisted of local monopolists that built facilities largely to serve customers within their service territories, has given way to broad regional markets that cross service territories and state boundaries. Where transmission investment was once only a candidate for monopoly rate base, today such costs can be allocated to users of regionally-interconnected systems who can be very diverse. In both bilateral utility and organized (i.e., markets run by regional transmission organizations (“RTOs”)) markets, the disputes over cost allocation and cost recovery, and the procedural delays occasioned by these disputes, are legendary.

There are numerous ways to allocate costs. At one end of a spectrum of approaches is so-called participant funding which seeks to allocate costs of a transmission upgrade or expansion to immediate “cost causers” such as interconnecting generators even if facilities may have regional reliability or economic benefits. At the other end of the spectrum is the “socialization” of costs, meaning a broad allocation of all project costs to the perceived beneficiaries of the project across the market or region served. Different perceptions of the equities and the reliability or economic benefits of a grid expansion have often chilled transmission investment. The debate over cost allocation remains largely unresolved.

WIRES’ Blue Ribbon Panel of five experts from academe, utility operations, and the economic consulting world produced a short but powerful analysis in October 2007. This “White Paper” is remarkable for its clarity and flexibility. It is attached to this testimony but let me summarize its main points.

Rather than choose the best practice from among competing cost allocation approaches, the Blue Ribbon Panel ultimately decided to articulate fixed principles for determining the benefits of new transmission investments and for allocating the costs efficiently and equitably among those who benefit from a transmission enhancement. Such principles could be applied in all markets and in a variety of circumstances. The Panel’s White Paper relies on regional transmission planning as the key and, if that process can be advanced either by states acting together or at the federal level, policy makers and grid operators should quickly find that regional transmission can be responsibly developed, states the Panel. The paper concludes that methods of allocating costs based on regional consensus or private settlement agreements, while expedient, may not support a sustainable and viable environment for attraction of capital into transmission projects. The White Paper also finds that the debates over cost allocations often simply serve as proxies for disagreements over other issues such as siting.

At bottom, the Panel’s paper concludes that a sound cost-recovery policy must have one critically important foundation or pre-condition: clear, consistent and principled regulatory policy and oversight. Good cost allocation, it asserts, should be based on: (1) establishing a credible process for deciding which transmission investment should proceed, with the process based on inclusiveness and transparency; (2) assuring that regulation provides an adequate definition of the geographic footprint(s) of physical, regional electricity market(s) to be served in the transmission planning and expansion policy; (3) establishing a credible and principled “transaction

* Documents have been retained in committee files.

chain”, linking those that ultimately benefit from open-access transmission—e.g., customer loads—with the responsibility to pay for transmission investment; (4) using “rules of thumb” related to the size of the transmission asset(s) being proposed as the basis for presumptions about who should pay; and (5) clarifying the regulatory jurisdiction for recovery of transmission investment costs to ensure appropriate price signals and consistency with national policy for non-discriminatory access to transmission.

The Panel thereby arrived at ten principles to guide the allocation of costs of new network transmission investment in all areas of the United States. Although admittedly favoring the broadest equitable allocation of costs among the regional beneficiaries of a project, the paper does not recommend a one-size-fits-all method of cost allocation.

Principle 1.—All viable methods of allocating the costs of new network transmission require a study of who benefits from, and who should pay for, an upgrade or expansion of the grid, unless regulators establish as policy that certain types of facilities presumptively benefit the entire market or region. In either case, sound planning processes are critical to that determination.

Principle 2.—Network transmission investments should be analyzed using a single standard (or unit of measure) that combines reliability and economic values without distinction, as the basis for cost allocation.

Principle 3.—The appropriate standard of measurement of the benefits of transmission is aggregate societal benefits within the geographic region being examined.

Principle 4.—Sound transmission planning (to analyze benefits and costs and the distribution of benefits for the purpose of allocating costs) should incorporate a number of features:

Principle 4A.—Transmission planning and analysis should be done on a regional level—tending toward larger regions as a general rule. While the overall planning process must encompass a large region, the planning studies cannot lose sight of the impacts on sub-regions.

Principle 4B.—Transmission planning and analysis should include all of the demand loads (existing and anticipated) and all of the supply resources (existing and anticipated) located within the geographic region for which planning is taking place.

Principle 4C.—Transmission planning should occur in a process that is open, transparent, and inclusive, and conducted by a credible entity without particular attachment to specific interests or market outcomes in the region.

Principle 5.—Transmission investments involving “baskets” of projects that satisfy these standards and which emerge as a net societal benefit (to either the region or sub-regions) through the results of robust transmission planning processes should presumptively be candidates for broad, or socialized, cost recovery across the region benefiting from the project(s).

Principle 6.—As a rebuttable presumption in transmission planning exercises, the larger the size of a new facility, the greater its potential to serve the broadest segment of interstate commerce and therefore the larger the region that should support it.

Principle 7.—The costs of new investment should be allocated to customers in the benefiting region.

Principle 8.—New transmission investment should be supported in federal or other wholesale rates, as appropriate, and not be included in retail rate base subject to regulation by the various states. To the extent that existing transmission assets can be removed from retail rate base and transferred to federal or wholesale rates in an orderly and coherent manner it would be useful to do so.

Principle 9.—On a going-forward basis only, cost allocations for new transmission should be subject to periodic review to determine whether beneficiaries from the investment have changed in any major ways that distort cost responsibility. Established transmission cost allocations should otherwise be rebuttably presumed just and reasonable.

Principle 10.—Free entry of transmission investment should be permitted, to the extent that the proponents are willing to pay for such investment and that such investment does not adversely impact the network in ways that are not addressed by the proponents.

In sum, the White Paper sets forth the best way to decide who pays for transmission at all levels and in all markets and regions. It is necessary to identify bene-

facial transmission enhancements through thorough and open planning, to provide credible (if not precise) determinations of whom benefits from an investment, and to adhere to these principles for allocating costs when serving distinctly regional needs—irrespective of conflicting stakeholder interests or the political environment surrounding a specific project. If followed, the Panel’s principles could significantly reduce litigation and other process impediments to new transmission.

Policy makers agree. During the July 17, 2008 FERC open meeting, Commissioner Phillip Moeller recognized that such principles could be instrumental in timely planning of the grid in the Pacific Northwest and elsewhere. “[C]ontroversial aspects of the [open access transmission] planning process, such as cost allocation, may delay the process since there is a misperception of winners and losers. While some think of cost allocation as a zero-sum game, I do not. Benefits greatly exceed the costs for the majority of participants in nearly all cases. The Blue Ribbon Panel Report . . . contained some excellent cost allocation principles and I remain interested in any feedback.”

FACILITIES SITING AND NATIONAL INTEREST ELECTRIC TRANSMISSION CORRIDORS

Facilities siting is an intractable problem that often leaves all parties dissatisfied and the long-term interests of electricity consumers ignored. Congress sought a balanced approach to siting transmission facilities when it adopted Section 216 of the Federal Power Act in 2005. That provision allows FERC to site transmission as a “back-stop” to state procedures, and grant any necessary federal rights of eminent domain, ONLY (1) if the facilities are located within broadly-defined corridors designated by DOE as experiencing significant market inefficiency, high prices, and threats to reliability that should be resolved through enhancement of the transmission system; (2) after states have had the opportunity to consider a project under their traditional authority to site facilities (or lack of such authority) and have failed to act in a timely manner; and (3) pursuant to its own subsequent review, including environmental analysis under the National Environmental Policy Act and applicable laws, to ascertain what the public interest requires.

The DOE carried out its responsibilities by designating two National Interest Electric Transmission Corridors (“NIETC”)—one in the Mid-Atlantic Area (Docket No. 2007-OE-01), and another in the Southwest Area (Docket No. 2007-OE-02). WIRES supports DOE’s action. The NIETC process and these designations must be viewed in perspective. These designations provide a context within which states can engage with citizens and local or regional utilities in planning to meet our infrastructure needs. They do not site facilities. They are not determinative of the outcome of transmission siting or planning processes. They do not, and will not, take property. The process does not preempt or undermine protection of environmentally or culturally sensitive areas or assets. A designation does not pick winners and losers or specify a required route for any line. Any suggestion that designations should be made more specific would place DOE in the role of a “super” transmission planner, a role DOE is not prepared to fulfill by virtue of its expertise, resources, or legal authority.

Regional planning of electric transmission is once again key to achieving sound decisions on the merits of individual lines. If that process can be advanced either by states acting together or at the federal level pursuant to FERC’s Order No. 890, policy makers and grid operators will quickly find that regional transmission can be responsibly developed to achieve access to reasonably priced electric generation and to unlock the potential of the substantial new renewable and other resources that are located far from electricity customers.

WIRES believes that the NIETC process as it now exists is not an adequate or complete answer to what ails transmission investment. While it is a valid attempt to address the obvious mismatch between the interstate operation of the grid at the high voltages and the exclusive authority of states to determine if such lines are to be constructed, the lead-time for planning and constructing transmission—which is already substantial—promises to remain so. For example, FERC recently received a first request for pre-filing consultation under its new back-stop siting rules after the states of Arizona and California reached an impasse, not about where facilities should be built or even about which state’s ratepayers should bear the costs, but about the very desirability of exporting electricity in interstate commerce. FERC’s careful process will add approximately two years or more to the already considerable time this case has taken at the state level. When and if FERC acts on a completed application, the matter will no doubt be appealed. Next month is the third anniversary of EPA’s Act and the second anniversary of DOE’s congestion study mandated by the Act. Any constructive impacts from the NIETC process are still relatively distant.

The NIETC process may also fail to achieve its goals for two additional but related reasons. First, transmitting large amounts of remotely located renewable generation to load will unquestionably entail entirely new high-voltage network additions that will cross multiple jurisdictions in many circumstances. The need to take advantage of these domestic, "location-constrained" renewable and clean-coal resources will be central to any climate change and energy independence goals. Development of these generating facilities await some indication that transmission capacity will be available to them. Yet, DOE's focus in implementing NIETCs is transmission constraints and congestion that already exist. Thus, for good reason, the Western Governors have stepped up their efforts to identify renewable energy zones and use such determinations as the basis for planning transmission. However, these procedures represent potentially longer and more circuitous paths to developing a thoughtful regional transmission plan than FERC has already prescribed under Order No. 890. Second, upgrades or expansions to the grid may also be necessary to ensure electric reliability for our digital society, promote energy security, or meet economic development and demographic trends. Section 1221 of EPAAct permits DOE to take these forward-looking factors into account when designating corridors but it has largely chosen not to do so. I am unsure whether this reflects a reading of the law or a practical decision about the difficulties of formulating future plans for integrating alternative energy resources.

In the final analysis, delay in selecting and building the right transmission in the right place to serve the right generation resources cannot be good for consumers.

THE CHALLENGE OF ESCALATING COSTS

Transmission is generally the smallest component of the typical retail electric bill. Embedded transmission services may cost as little as a few mills in a 7-cent/kwh rate. This relative relationship is due to several factors, not the least of which is the high cost of most fuels and generation facilities and the large investment that integrated utilities routinely make in distribution facilities. Moreover, transmission infrastructure is aging and is often fully depreciated. The prospect of major new investments in the grid may not change this proportional relationship but it nevertheless represents a major, and in our minds necessary, future outlay of capital that must be recoverable.

U.S. companies will have spent about \$30 billion on transmission in the period 2006-2009, at a rate roughly double the annual expenditures at the beginning of the century. However, only 668 miles of high voltage transmission has been built across state lines since 2000. Economists project that we will need to spend well over \$200 billion on new transmission by 2030. That compares to as much as \$1 trillion that we will need to spend on distribution and new electrical generation in that time frame, however.

The industry recognizes the potential impact on consumers of such expenditures. Those consumer impacts could be exacerbated by increases in the cost of materials and human resources. It is reasonable to expect that, as the Nation turns to the task of fixing many aspects of its basic infrastructure (water, roads, bridges, railways) over the next few years, the competition for materials, equipment, skilled labor, and capital to strengthen the grid will also strengthen. Investments in utility infrastructure internationally will place substantial additional pressure on the cost of these resources as well. WIRES therefore cannot emphasize strongly enough the need to plan grid expansions thoroughly and intelligently and to be as economically efficient as possible during the build-out. WIRES advocates taking maximum advantage of energy efficiency, demand response, and conservation to rationalize investments in the electrical system as a whole. Nonetheless, there is no substitute for having a reliable integrated high voltage system.

I have also attached the WIRES study* illustrating the nature of the cost pressures currently on the transmission sector.

Thank you once again for your attention to this critical national priority.

The CHAIRMAN. Thank you very much. Mr. Boston, go right ahead.

STATEMENT OF TERRY BOSTON, PJM INTERCONNECTION, NORRISTOWN, PA

Mr. BOSTON. Thank you, Mr. Chairman and members of the committee for the opportunity to testify today. PJM Interconnection is

*Document has been retained in committee files.

a regional transmission organization responsible for the reliability of the grid and operating a wholesale market that serves over 15 million Americans.

Let me start with a simple premise as Chairman Bingaman did today that electricity is the lifeblood of our Nation's economy and the lifelines to our homes. On hot days like today it humbles me every time I think about that. Transmission is the enabler of virtually all of the energy solutions Congress may embrace to strive for energy independence and environmental protection.

Those solutions will require transmission infrastructure whether it involves increasing renewable resources, using more nuclear power, shifting to clean coal technologies with carbon sequestering or relying on plug in hybrid vehicles for transportation. Wind power will be on distant mountain tops, offshore or as far away as the Dakotas bidding into the PJM capacity market. New nuclear units will be located as testified earlier, at the site of existing nuclear units primarily because it can be licensed much faster.

Clean coal will be located in the coal seams and where the carbon sequestered geological conditions will allow them to capture the carbon. Of all of these examples, only the plug in hybrid vehicles will be located near our population centers and our load centers. To make these distant resources work a substantial investment in transmission will be required along with significant investment in the smart grid technologies such as phasor measurement units for the transmission level and on the distribution level, we need two way communication between the grid operators and the appliances in your home and those battery chargers in plug in vehicles.

Unfortunately we continue to plow the same ground on debating the respective roles of the Federal Government and the State governments. But the more important task in my view in the future is to ensure the integration of new technology with the environmental and energy policy issues that you are already addressing. This hearing is being held almost as we mark the fifth anniversary of the blackout of August 14, 2003.

We've come a long way since then. But there's still significant challenges that require new grid enhancement. As part of a 15-year—and I brought a copy to show the detail—regional planning process at PJM we've identified potential overloads and voltage risks that threaten future reliability of the bulk transmission system.

The transmission orders at PJM region have stepped up to the plate and proposed four significant new transmission projects. Each of these projects are critically important to maintain the reliability of the region. On the generation side, we currently have more than 90,000 megawatts of new generation in our grid connection queue. Of that 40,000 megawatts is wind. We have 1,100 megawatts already connected with, excuse me, with 1,500 megawatts in various stages of construction.

Both State renewable portfolio standards and climate change goals will require grid enhancements. Plug in electric hybrid vehicles represents an exciting new opportunity. However, if everyone comes home and plugs their car in at 5 p.m. while the air conditioners are still humming, we will not be better off.

We need smart grid technologies for communication and control to drive customer behaviors. If done right, electric cars can make both the power system assets and the U.S. transportation system more efficient. Currently off peak market prices can provide the equivalent cost of gasoline at 60 cents per gallon on most nights.

As you can see the grid of the future will be impacted by the policy choices you make. I hope I have demonstrated the importance of building new transmission and having a robust grid to serve our economy, to serve our customers and to provide the innovation and efficiency that power markets need to bring to this Nation. For a decade following the New York blackout of 1965 this Nation, this industry came together and built transmission that made the electric reliability here in the U.S. the envy of the world from the mid-1970s through the mid-1990s.

To earn that status again we must take control of our own destiny on energy adequacy and reliability. By working together with the States we can do it again. Thank you for the opportunity to testify. I look forward to your questions.

[The prepared statement of Mr. Boston follows:]

PREPARED STATEMENT OF TERRY BOSTON, PJM INTERCONNECTION, NORRISTOWN, PA

EXECUTIVE SUMMARY

Transmission will play a critical role in enabling virtually any of the public policy goals the Congress may embrace to strive for energy independence and meet environmental goals, including renewable energy, nuclear energy, clean-coal technology or plug-in hybrid electric vehicles.

To adopt some of the ambitious renewable energy and climate change goals that are being discussed will require a substantial investment in new transmission and new grid technology. The electricity industry can deliver, as it has done in the past, but only if we get beyond endless debate over yesterday's issues and instead partner with the states, the federal government, consumers and industry to focus on truly deploying the 21st century grid.

PJM now has over 90,000 megawatts (MW) of new generation in our interconnection queue made up of a mix of resources, including more than 40,000 MW of wind generation. This level of new interest in generation in our region is a good sign and is most welcome. New generation is beneficial because it can meet load growth and displace older, more inefficient and in some cases environmentally challenged generation. We also have seen a 300 percent increase in demand response resources from 2006 to 2012.

The development of renewable energy resources will require significantly more transmission investment than has been made since the construction peak in the mid 1970s. While other technologies are promising, the greatest promise for renewable energy in our region is wind generation. Additional long-haul interstate transmission will be needed to move these wind resources to load centers in the east.

The grid of the future will be impacted by the policy choices you make in key areas such as climate change, energy independence and encouragement of plug-in hybrid electric vehicles and Smart Grid technology. PJM would like to encourage you in your deliberations to consider these principles:

- Focus on what's doable: It is important to take into account the need for adequate time, R&D and resources to ensure that the grid can serve that policy goal in a reliable and cost-effective fashion.
- Acknowledge the trade-offs: There have been several calls for the adoption of ambitious renewable targets and mandates. The development of renewable energy resources will require a significant expansion of the grid, as well as a significant increase in needed operating reserves given the intermittent nature of wind and other resources.
- Understand the real-time impacts of policy decisions: We are in the process of modeling the impact of various climate change scenarios on power flows and system reliability. I urge you to be open to information from PJM and others as you weigh these difficult policy choices.

- Look forward not backwards: From a legislative viewpoint, I would urge focus on the next generation of issues outlined above since, if left unaddressed, they could rapidly overwhelm the traditional issues that this industry has concentrated on in years past.

After the New York blackout of 1965, this nation and this industry came together and built transmission that made the electric reliability in the United States the envy of the world from the mid 1970s through the mid 1990s. We must work together to control our destiny on energy adequacy and reliability. We can do it again.

Thank you for the opportunity to testify today. I am Terry Boston, President and CEO of PJM Interconnection. PJM is the regional transmission organization serving all or part of 13 states and the District of Columbia. Our job is to ensure reliability of the bulk power grid and operate a competitive wholesale market for electricity serving more than 50 million Americans. We do this by operating the grid to meet the highest level of reliability standards, administering a Day-Ahead and Real-Time Market for electricity, and planning the long-term adequacy of the bulk power system.

This hearing is very timely as the industry must, more than ever, “connect the dots” as to the critical role that transmission plays in meeting the public policy goals that are being debated in Washington D.C. and throughout the country. In a nutshell:

- If one is for renewable generation to power America’s economy, which I am, we need more transmission;
- If one is for more nuclear energy to power America’s economy, which I am, we need more transmission;
- If one is for the development of clean coal technology with carbon sequestration, which I am, we need more transmission;
- If one is for the development of plug-in hybrid electric vehicles that improve overall system efficiency and reduce oil imports and carbon emissions, which I am, we need more transmission.

First we must understand that electricity is the common currency of many sources of energy. Transmission is the enabler of virtually any of the public policy goals the Congress may embrace striving for energy independence and meeting environmental goals. This focus on transmission does not mean that other resources, such as new generation, demand-side response and energy efficiency, are not also sorely needed to feed the nation’s appetite for electricity, the fuel of our digital economy. In the U.S., the forecast for peak demand for power is expected to increase by over 135,000 megawatts (MW) or 17.7 percent in the next ten years. (We generally estimate one megawatt of electricity is enough to power between 800 and 1,000 homes.)

My second message is equally basic: We don’t have the luxury of time for continuous debates over corridors, cost allocation or the respective role of the states and the federal government in these areas. Although enhancements can certainly be made to the statutory mechanisms you established in the Energy Policy Act of 2005 (EPACT 2005) to address these issues, the more important task in my view is to focus on the future—ensuring a complementary integration of the next generation of technology with the next generation of issues you are already addressing, such as climate change and energy independence.

The grid does not operate in a vacuum and there is no free lunch. To adopt some of the ambitious renewable energy and climate change goals that are being discussed will require a substantial investment in new transmission and new grid technology. It will require us to obtain additional operating reserves from fossil-based generation, at the very least, as an interim resource given the intermittent nature of wind generation and uncertainty of other alternative energy resources. And it will require rapid deployment of Smart Grid technologies. They include phasor measurement units at the transmission level and sophisticated two-way communication between the market and grid operator and appliances in the home as well as batteries in future plug-in hybrid electric vehicles—all of which will help to meet rising demand in a more fuel-efficient, environmentally responsible manner.

As illustrated by a number of recent comments from both sides of the aisle, starting with Senator Lamar Alexander, we will need a 21st century “Manhattan Project” and an ambitious goal like putting a man on the moon combined to ensure we can solve our new energy and environmental public policy problems. I am confident that this industry can deliver, as it has done in the past, but only if we get beyond endless debate over yesterday’s issues and instead partner with the states, the federal government, consumers and industry to focus on truly deploying and enhancing the 21st century grid.

What We Have Achieved

At the outset, I think it's important to paint an accurate picture of the grid today—both its strengths and weaknesses. Although grid reinforcement is clearly needed, I would not want the Committee to walk away with a one-sided picture. I am pleased to report that in the PJM region the system has been performing extremely well so far this summer as well as during the past few summers. To date, the summer of 2008 has been characterized by typical summer weather conditions. However, tornados caused line outages in early June in Virginia and Maryland and as far north as Michigan. This stressed the system and our members raced against the clock to restore transmission lines that allowed PJM to meet a peak load of 130,000 MW. These extreme conditions demonstrate the importance of a robust grid but also illustrate how increased demand is stressing the system.

I don't want to ignore the fact that we are approaching the fifth anniversary of the blackout of August 14, 2003—a blackout caused by basic problems that have tripped up this industry before—lines sagging into trees, and inadequacies in operator training and communication and control systems. The industry has moved forward since then and your adoption [and the Federal Energy Regulatory Commission's (FERC) implementation] of laws establishing mandatory reliability standards has helped immensely. My thanks to this Committee for its leadership and to the FERC for its leadership in implementing those provisions of the EPACT 2005.

It is often stated that the grid is being used in ways for which it was never originally designed. This statement, which you will inevitably hear again, is true but only tells half the story. We have far more sophisticated operations and market-based tools to manage flows on the grid than we have ever had. These tools include our state estimator which monitors and reports on the state of the system every two minutes. They include our ability to redispatch generation (achieved through sending locational price signals) which allows us to proactively clear congestion before reliability is threatened by overloads on a given line or set of lines. In short, we have been able to develop technology to help manage power flow.

FUTURE DRIVERS OF GRID ENHANCEMENT

Although there is much that we have achieved, there are significant challenges facing us that require considerable grid improvements and deployment of advanced technology. To meet these challenges, there are three principle drivers, each of which affect the grid slightly differently but all of which must ultimately work in harmony and be rationalized through a transparent, robust regional planning process.

1. Meeting reliability requirements is paramount: The North American Electric Reliability Corporation (NERC) and regional reliability entities establish reliability criteria, among other things, how robust the system is to respond to the loss of any given transmission line or generating unit. We analyze flows on the system against the thermal ratings of each of the transmission lines to test when the line might become overloaded or reaches a voltage limit such that additional transmission is needed to meet rising demand. Our planning process looks forward 15 years to determine, for each line, when that point is reached (and thus a reliability violation triggered) based on projections of growth in customer usage of electricity. As part of our ongoing assessment of the PJM system, we have identified the need for significant reinforcement of the bulk power grid in our region as a result of forecasted overloads and violations of reliability criteria. The following map* shows overloads that we would expect to see on the major 500kV lines in the PJM region if the system is not strengthened.

Our independent board reviews these findings, along with the input from stakeholders through our open and transparent regional planning process. Based on these reviews, we have determined that significant new transmission investment will be required to ensure future reliability. The transmission owners in the PJM region have stepped up to the plate and proposed significant new projects, some of which await siting approval by the states in pending proceedings. The major lines authorized to be built are the Trans-Allegheny Interstate Line (TrAIL), which runs from Pennsylvania to West Virginia and to northern Virginia; the Amos to Kemptown line connecting West Virginia and Maryland, and the Susquehanna to Roseland line, connecting northern Pennsylvania to northern New Jersey.

* Graphics have been retained in committee files.

Each of these projects, which are reliability-related, is critically important to ensuring compliance with these reliability standards and maintaining reliability for the region. You are likely most familiar with TrAIL which has received considerable media coverage in this area. This project is the most advanced and we are hopeful our members building this project receive favorable siting decisions from the Virginia State Corporation Commission, the Pennsylvania Public Utility Commission and the West Virginia Public Service Commission so the very real and near-time reliability challenges outlined above can be adequately addressed.

2. Strengthening the grid provides future value to customers: In total, nearly \$10 billion in new transmission has been approved by the independent PJM Board since 2000, all of which is in various stages of development. Part of this investment is for the interconnection of new generation and part is for addressing the reliability requirements of the region in light of ever increasing growth in demand for electricity. Presently, we have over 90,000 MW of new generation in our interconnection queue made up of a mix of resources. Most notably, we presently have almost 40,000 MW of wind generation in the queue.

Recently, PJM proposed revisions to its process that would expedite the review of interconnection of new generation projects. Pending FERC approval, system impact studies for certain similarly affected projects now will be reviewed as a "cluster." PJM will determine system upgrades required by adding the entire group to the system, rather than looking at each project incrementally, a process which will save time and money.

This level of new interest in generation in our regional capacity market is a good sign and is most welcome. New generation is beneficial because it can meet our load growth and displace older more inefficient, and in some cases, environmentally challenged generation. I am pleased to report that with the support of the FERC, our members and stakeholders, we are now implementing an economic planning process which proactively identifies new transmission projects, not just to meet reliability requirements, but also to reduce customer congestion costs. This process will provide the critical information that will empower states and customers to build out the grid to meet their economic and reliability needs.

3. Strengthening the grid helps to meet energy and environmental public policy goals: Both state Renewable Portfolio Standard (RPS) requirements and climate change goals have the potential to significantly add to the need for grid enhancement. For example, the price of carbon allowances will affect the marginal costs and thus the dispatch of different resources and, as a result, change the dominant power flows that have characterized the system to date. By the same token, state RPS and regional greenhouse gas initiatives also work to change the portfolio of what type of generation is built in the future and where it is located.

The development of renewable energy resources will require significantly more transmission investment than has been made in a long time. Although other technologies are promising, the greatest promise for renewable energy in our region is wind generation. The best opportunity for that development is often off-shore or on mountain passes far from the major load centers. If carbon prices curtail coal generation at the margin, then the sources of generation become even farther away from load centers as we begin to depend on more distant and abundant wind resources, such as those projects being discussed in the Dakotas, Iowa, Wisconsin and Minnesota. Additional transmission, over and above the transmission to serve the projects already in the queue, will be needed to move these more abundant wind resources to load centers in the east.

As I noted previously, wind is a resource that does not blow steadily at the same rate throughout the day. In the long run, storage technology, including plug-in hybrid electric vehicles (PHEV)s, must be developed to take advantage of these intermittent resources. However, they will be in service long before storage of electricity in large quantities is commercially viable. There will be significant operational challenges that must be understood and overcome to maintain reliability during this time period. Moreover, the best location for storage could well be different and far removed from the best location for wind and other intermittent resources. In short, the transmission grid of the future will need to be even more robust and flexible to handle the variability of wind resources.

LOOKING FORWARD: GETTING AHEAD OF THE NEXT GENERATION OF ISSUES

For purposes of your deliberations, I would urge this Committee to focus on the next generation of issues that will impact the grid and make sure that your decisions are informed by the realities of what is doable within the timeframes you set. We face the following challenges:

- We face a welcome but difficult task regarding those generation projects proposed for construction to the system. We must complete studies of more than 90,000 MW of new generation, including almost 40,000 MW of wind generation, pending in the queue. The queue process provides reliability evaluations of proposed generation projects.
- Overall demand for electricity continues to climb. The average hourly load in PJM has increased nearly two and a half percent each year from 2005 to 2006 and continues upward. We have seen a jump start to demand response in the region since instituting our new capacity market model but the industry and customers still have a way to go until demand response and energy efficiency can significantly impact the need for more resources to meet this increasing load growth.
- Plug-in hybrid vehicles represent an exciting new opportunity to provide both ancillary services to the grid and utilize the power system assets more efficiently. If done right, plug-in hybrid vehicles can enhance the efficiency of the grid by shifting load to off-peak nighttime hours. On the other hand, if everyone plugs in their car at 5 p.m. and there are no economic incentives or communication and control technology to drive different customer behavior, then we could be worse off.
- The auto industry and the electric industry also must work together to make the future PHEVs deliver on their potential to reduce oil imports, to reduce carbon dioxide and to reduce the cost of transportation.

DEVELOPING THE TOOLS FOR THE TOOLBOX

There are a number of tools which are in various stages of development to meet these challenges:

- Smart Grid Deployment.—Deployment of Smart Grid technology, a goal which you adopted in the 2007 Energy PACT (EPACT 2007), will be a significant step forward. One of the main features of the Smart Grid is two-way communication with active participation by customers in controlling energy consumption. This can be done through the development of “smart” appliances that are pre-programmed by the consumer to respond to market price and operational signals from the grid operator. Deployment of the Smart Grid can be accelerated through regulatory encouragement at the state level, accelerated depreciation of Smart Grid investment, development of interoperability protocols as you called for in EPACT 2007. Consideration in any carbon legislation should also be given to the development of a pool of allowances for the Smart Grid, similar to what was done to jump start deployment of demand side resources in the 1990 Clean Air Act (CAIR) amendments.
- Phasor Measurement Technology.—We also need to continue research and deployment of phasor technology. In essence, phasor technology allows more granular control of power flows on the grid and more accurate determination of operating limits in real time. PJM is working with our stakeholders and various industry organizations to not only get more phasor measurement units installed in the PJM footprint, but also to determine how best to employ this data. It is very promising—seeing 30 samples of data per second versus three-second scan rate of data through the Supervisory Control and Data Acquisition (SCADA) is like comparing an MRI to an x-ray in the medical field.
- Plug-In Hybrid Electric Vehicles.—If successfully deployed, the dividends are substantial. For example, PJM’s off-peak market can provide the equivalent cost of gasoline at 60 cents per gallon on most nights as highlighted in the chart below. PJM has joined with the University of Delaware, Pepco Holdings Inc. and its affiliate utilities, AC Propulsion, Comverge Inc. and the Atlantic County Utilities Authority to form the Mid-Atlantic Grid Interactive Car (MAGIC) consortium. MAGIC is demonstrating and evaluating vehicle-to-grid (V2G) technology that allows plug-in, battery-operated vehicles to charge from the grid and to discharge their stored power to the grid based on regulation signals from PJM. PJM is participating in a technology and information exchange with automotive and battery manufacturers, energy storage companies and electric utilities to understand the potential business opportunities, value propositions and necessary standards to advance understanding and support for PHEVs to par-

ticipate in grid markets. We plan to have another demonstration of the state of PHEV technology on the PJM campus this fall.

Electric Vehicle – Equivalent Electric “Price Per Gallon”

Electric Fuel Economy in kWhs per Mile	0.25	0.30	0.35	0.40
\$0.05	\$0.31	\$0.38	\$0.44	\$0.50
\$0.06	\$0.38	\$0.45	\$0.53	\$0.60
\$0.07	\$0.44	\$0.53	\$0.61	\$0.70
\$0.08	\$0.50		\$0.70	\$0.80
\$0.09	\$0.56	\$0.68	\$0.79	\$0.90
\$0.10	\$0.63	\$0.75	\$0.88	\$1.00

Source: Duke Energy

- **Regional Planning.**—We have a strong regional transmission planning process in PJM, a process that analyzes both economic upgrades, as well as reliability upgrades. We have developed protocols with the Midwest ISO on joint planning and cost allocation. We also have a joint TVA/MISO/PJM reliability coordination agreement which expands that coordination of planning over an even larger area. We are committed to developing the same kind of regional planning arrangements, with appropriate cost allocation, between PJM and New York and other neighbors to recognize that planning of an interconnected grid should not stop at a given regional transmission organization border.

THE ROLE OF THE POLICYMAKER: SOME RECOMMENDED PRINCIPLES

The grid of the future will be impacted by the policy choices you make in key areas such as climate change, energy independence and the encouragement of plug-in hybrid vehicles and Smart Grid technology. We at PJM are not policymakers, but can serve as a resource to this Committee and other state and federal policymakers, providing independent analysis of the impacts of potential decisions on the reliability of the grid and the economics of power supply to investors and wholesale consumers. In summary, I would like to leave you with a few recommended principles as you deliberate on these issues:

Focus on what’s doable: It is important that we all ensure that adequate transmission infrastructure can be put in place to meet the policy goals that the Congress sets. This does not mean that you should accept the status quo—the industry should be challenged to respond to meet these policy initiatives. But it is important to make sure that any legislation takes into account the need for adequate time, research and development and resources to ensure that the grid can serve that policy goal in a reliable and cost-effective fashion.

Acknowledge the trade-offs: There have been several notable calls for the adoption of ambitious renewable targets and mandates. However, there is no free lunch—the development of renewable energy resources will require a significant expansion of the grid, as well as a significant increase in needed operating reserves given the intermittent nature of wind and other resources. There are a number of sources of operating reserves, including demand response, but traditional fossil fuel generation will remain one of the key sources in the near future.

Understand the real-time impacts of policy decisions: We at PJM are in the process of modeling the impact of various climate change scenarios on power flows and system reliability. We are still working through the issues and assumptions in undertaking this exercise. I urge you to be open to such information from the PJM region and other regions so that you have full, unbiased resources available to you as you weigh these difficult policy choices. At the end of the day, Ohm’s and Kirchoff’s laws of physics will govern the grid. It is vitally important that we build transmission and have a robust grid to protect our economy . . . to serve our customers. We will be glad to model the impacts of policy changes and provide information to this committee.

Look forward not backwards: We are continuing to work with our states and stakeholders on difficult issues such as cost allocation and state siting of large

interstate projects. We've worked with this Committee to ensure that heritage area and other land-use priorities are respected but also compatible with the region's infrastructure needs. But in the transmission area, it is easy to endlessly replot old ground on issues where consensus has Energy and Natural Resources Committee proven elusive. I have personally pledged to work with our states, stakeholders and the FERC on these issues. But from a legislative viewpoint, I would urge focus on the next generation of issues outlined above since, if left unaddressed, they could rapidly overwhelm the traditional issues that this industry has concentrated on in years past. We need a new focus for energy adequacy for the future.

We can debate all day whether the solution is supply-side or demand-side, but as oilman T. Boone Pickens said last week, "we cannot drill our way out of this problem" nor, I might add, can we save our way out of our energy adequacy problem. We must work on both the supply-side and the demand-side of the problem.

The societal cost is estimated at \$6 billion per day for the August 14, 2003 blackout. It is vitally important we build transmission and have a robust grid to protect our economy . . . to serve our customers . . . to provide the innovation and efficiency that power markets bring to the nation. But we also must recognize that without reliability, we shut down our economy . . . without reliability, we jeopardize our customers livelihood and sometimes even their . . . lives and without reliability, there can be no markets, electricity or otherwise.

Following the New York blackout of 1965, this nation and this industry came together and built transmission that made the electric reliability in the U.S. the envy of the world from the mid 1970s through the mid 1990s. We must work together once again to control our own destiny on energy adequacy and reliability.

Finally, let me extend an invitation to each of you and your staff to visit PJM, see the control room and observe how we manage this very large 13-state grid minute-by-minute, hour-by-hour on a 24/7 basis.

I thank you for this opportunity to testify and look forward to your questions.

The CHAIRMAN. Thank you very much.
Mr. Whitley.

**STATEMENT OF COLIN WHITLEY, REPRESENTING AMERICAN
PUBLIC POWER ASSOCIATION, WICHITA, KS**

Mr. WHITLEY. Thank you, Mr. Chairman. APPA appreciates the opportunity to testify this morning about the state of electric transmission in the U.S. I'm Colin Whitley, CEO and general manager of the Kansas Power Pool. I serve on APPA's Board of Directors and I'm testifying on behalf of APPA.

APPA represents the interest of more than 2,000 publicly owned electric utility systems across the country serving approximately 45 million Americans. The Kansas Power Pool consists of 42 cities in Kansas. The largest, who have populations of just over 10,000 people, while the smallest has a population of roughly 150.

KPP supplies full requirement electric service to cities located within service territories of three different transmission owning electric utilities, all within the State of Kansas. KPP's total load of the RTO, known as the Southwest Power Pool is roughly 380 megawatts. The great majority of APPA's members, including the members of KPP are transmission dependent. This means that they must pay third parties for access to their bulk transmission systems to deliver their electricity to retail customers.

There are however, a number of public power systems that own significant transmission facilities. Because the EIA stopped collecting transmission data from public power, from cooperatives and Federal utilities in recent years, 2003 data are the latest complete statistics available, based on that APPA estimates, 110 public power utilities or approximately 8 percent of the Nation's transmission lines of 138kv or greater.

Data collected for use in NERC's 2007 long term reliability assessment show that public power utilities account for about 10 percent of the proposed new transmission lines, 230kv or greater for the years 2007 through 2016. There are a number of transmission related issues that are significant enough to merit their own hearings, RTO runs, centralized wholesale buyer markets, FERC's policy on transmission rate incentives, the Federal siting process to name a few. APPA urges the committee to hold such hearings.

The bottom line is that the major impediment to getting new transmission built continues to be siting. I urge Congress to continue to support the Federal backstop siting authority included in EPACT 2005 and to support DOE and FERC as they implement this authority.

Because of local and State opposition deciding transmission line as many industry participants as possible should be included in the regional transmission planning. Congress should encourage joint ownership of transmission facilities by public power systems and should eliminate financial barriers to such ownership like the private use restrictions for tax exempt financing. In addition existing transmission should be upgraded and maintained based on the requirement to serve load as opposed to the availability of incentives.

Finally while RTOs have helped improve reasonable transmission system operations and planning their emphasis on developing and operating supply markets has distracted them from the core transmission functions. Other transmission planning models exist like the Columbia Grid and the Pacific Northwest that can provide similar operational benefits at less cost.

I want to emphasize the following points in my testimony.

First, transmission investment is needed. EPACT 2005 siting authorities are a major step forward and should be supported and protected from repeal. If new electric generation resources, especially renewables, are going to be brought to the market to meet increasing demand and to address climate concerns, substantial new transmission facilities are going to be needed.

Some in the industry have quipped, "If you're going to love renewables, you can't hate transmission."

Second point is RTOs have added cost but haven't to date fulfilled their promise of producing significant investments in transmission. APPA and its members have long expressed their disappointment with the current "Day 2" RTOs, primarily the high prices produced by the centralized markets. APPA does recognize RTOs have positive features such as administration of regional open access or non discriminatory open access taxes, elimination of pancake transmission rates, strengthening of reasonable transmission planning processes.

But these substantial accomplishments have been overshadowed by the cost of problems created by the centralized markets. APPA is concerned that the operation of these markets has distracted RTOs attention away from their core mission of ensuring adequate investment in the regional transmission system. RTOs in the past relied too much on the use of price signals such as locational pricing to achieve needed transmission investment.

There's no real disagreement that the use of such pricings shows where the transmission facilities are needed rather the dispute has

been over whether these price signals actually resulted in transmission investment where it is needed. Research shows that it does not.

The third point is incentive ratings for investor owned utilities are being overused as a tool to entice new transmission investment. EPACT 2005 required FERC to establish incentive base rate treatments for transmission of by investor owned utilities. The purpose of the incentive is to ensure reliability and reduce cost of delivered power by reducing transmission congestion.

But we believe when FERC implemented these incentives they actually offered a smorgasbord of different transmission rate incentives and currently that has become the focus of transmission owners rather than the need to build transmission.

The fourth and the fifth points are reasonable transmission planning and cost allocation strategies are essential to getting more transmission built. Joint ownership, we believe, will spur additional transmission investment removing limits on the use of tax exempt financing is necessary to get more public power owned transmission built.

Finally I just want to thank you for the opportunity to testify before your committee. We need to resolve these important transmission related issues if we're to meet the Nation's ongoing challenges. I'd be happy to answer any questions you might have.

[The prepared statement of Mr. Whitley follows:]

PREPARED STATEMENT OF COLIN WHITLEY, REPRESENTING AMERICAN PUBLIC POWER ASSOCIATION, WICHITA, KS

APPA appreciates the opportunity to provide the following testimony for the Senate Energy and Natural Resources Committee's hearing to "examine the state of the nation's transmission grid, as well as the implementation of the 2005 Energy Policy Act transmission provisions, including reliability, siting and infrastructure investment." I am Colin Whitley, CEO and General Manager of the Kansas Power Pool. I serve on APPA's Board of Directors, and will testify on behalf of APPA.

APPA represents the interests of more than 2,000 publicly-owned electric utility systems across the country, serving approximately 45 million Americans. APPA member utilities include state public power agencies and municipal electric utilities that serve some of the nation's largest cities. However, the vast majority of these publicly-owned electric utilities serve small and medium-sized communities in 49 states, all but Hawaii. In fact, 70 percent of our member systems serve communities with populations of 10,000 people or less.

The Kansas Power Pool consists of 42 cities in Kansas—the largest two have populations of just over 10,000 people, while the smallest has a population of roughly 150. One of our members, the City of Winfield, currently provides full utility service (including electric and natural gas) to Rubbermaid and the largest "under roof" facility Rubbermaid owns. Winfield is also renowned for the Walnut Valley Blue Grass Festival that attracts tourists nationwide. Another member city, Greensburg, KS, is home to the world's largest hand dug well, and also experienced significant devastation from a tornado in 2007. KPP's challenge today is to help the City of Greensburg achieve their goal of 100% renewable resources supplying their future electrical needs. KPP applauds Greensburg's goal, and public power in Kansas will continue to support and expand delivery of electricity from renewable resources, including federal hydropower.

The Kansas Power Pool supplies full requirement electric service to cities located within two control areas and transmission systems owned by three entities, all within the State of Kansas. KPP's total load in the Regional Transmission Organization (RTO) known as the Southwest Power Pool (SPP) is roughly 380 megawatts (MWs). This is small in comparison to the total SPP load, however in the State of Kansas, public power serves approximately 18 percent of the total load. Kansas is a small state, population-wise; however we have provided and will continue to provide a significant amount of the nation's energy supply, including electricity from renewables.

Overall, public power systems' primary purpose is to provide reliable, efficient service to their local customers at the lowest possible cost, consistent with good environmental stewardship. Like hospitals, public schools, police and fire departments, and publicly-owned water and waste-water utilities, public power systems are locally created governmental institutions that address a basic community need: they operate on a not-for-profit basis to provide an essential public service, reliably and efficiently, at a reasonable price.

While the majority of KPP's members own and operate electric generating facilities, these generators are similar to the backup generators owned and operated by hospitals, public schools, etc. They own and operate them because of the need to "keep the lights on." All of this generation is either fueled by natural gas or diesel. These same cities have depended on the regional transmission system to supply the lowest cost service, but due to the lack of transmission maintenance, upgrades and expansions, the back-up units mentioned above have been used as a reason to either delay or negate long-needed transmission improvements.

The great majority of APPA's members, including the members of the KPP, are "transmission dependent," meaning that they must pay third parties for access to the bulk transmission system in order to acquire electricity from power plants for distribution to their retail customers. There are, however, a number of public power systems that own a significant amount of bulk transmission facilities—including the Los Angeles Department of Water and Power (LADWP) and Nebraska Public Power District, among others.

Because the Energy Information Administration (EIA) stopped collecting transmission data from public power, cooperative and federal utilities in recent years, 2003 data are the latest comprehensive statistics available by utility. Based on the 2003 data, APPA estimates that approximately 110 public power utilities own approximately eight percent of the nation's transmission lines of 138 kilovolts (kV) or greater. The North American Electric Reliability Corporation (NERC) collects information each year on planned transmission additions of 230 kV or greater. Data collected for use in NERC's 2007 Long-Term Reliability Assessment show that public power utilities account for about 10 percent of the proposed new transmission miles for the years 2007-2016.

Because of EIA's decision to discontinue collecting data from the entire electric utility industry, the only up-to-date comprehensive information on existing transmission investment and ownership is NERC's data on total transmission miles of lines 230 kV or greater summarized by NERC regions and sub-regions. Other information sources only cover part of the industry (for example, the Federal Energy Regulatory Commission's (FERC) Form 1 transmission data covers only FERC-regulated "public utilities," primarily investor-owned utilities—not publicly-owned and operated electric utilities collectively known as public power systems) or are published in inconsistent formats (for example, RTO or company announcements of billions of dollars in planned investments over a several year period). Consistent, industry-wide data would be very useful in assessing actual progress in getting needed new transmission facilities built.

As will be evident from the testimony below, there are a number of issues encompassed by the broad topic of "transmission" that are significant enough to merit their own hearings—RTO-run centralized wholesale power markets, and the new federal backstop siting process for transmission, to name only two—and APPA would urge the committee to consider holding such hearings.

APPA was also asked to discuss the implementation of transmission-related provisions in the Energy Policy Act of 2005 (EPAct05). In relation to EPAct05 implementation, therefore, our testimony below focuses on: the FERC back-stop transmission siting authority and the related Department of Energy (DOE) process for designating National Interest Electric Transmission Corridors (NIETC); transmission rate incentives for FERC regulated public utilities; mandatory reliability standards; and transmission facilities cost allocation.

TRANSMISSION INVESTMENT IS NEEDED

It is widely recognized that our current transmission system is insufficient and, in many regions, highly constrained. The weaknesses of the transmission grid not only threaten reliability, they undermine the ability of all types of generation, including renewable generation, to be developed and brought to market. Well-planned transmission improvements can increase the overall efficiency and reliability of the system. While improvements could increase the transmission rate paid by an end-user, the same end-user would benefit from increased reliability. Since generation and transmission are interdependent, the end-user could also benefit from lower-priced generation that would be made available with additional transmission access.

As mentioned above, the ability of KPP cities' to use their local high cost diesel and natural gas generation is a reason that has been cited by transmission owners for not building needed transmission facilities. Currently, KPP member cities are generating only to maintain voltage or as a result of restrictions on the transmission system. Decisions to separate generation from transmission to develop a wholesale electric power market in the SPP have added to the problem of underinvestment in transmission improvements in the past few decades.

Historically, the challenges to improving the transmission grid have been obtaining rights-of way, environmental and land use concerns about where the transmission lines are sited, and the sheer complexity of state and local siting procedures. While these challenges still exist, one major positive development has occurred in recent years—the enactment of federal “back-stop” siting authority for transmission lines. As the Committee well knows, this authority was granted in the Energy Policy Act of 2005 (EPA05) in Section 1221, which added new Section 216 to the Federal Power Act (FPA). This section sets up a process under which: 1) DOE designates certain corridors where transmission is highly constrained or congested as NIETCs; 2) FERC can grant siting and construction permits employing federal eminent domain authority for transmission facilities in these NIETCs if, after a certain period passes, state authorities have withheld approval of such proposed transmission facilities, a state does not have the authority to approve the siting of such facilities or to consider the interstate benefits, or the applicant is a transmitting utility that does not serve end-use customers in the state where the project is proposed. FERC must take certain issues into consideration when using its backstop siting authority. It must find that the proposed facilities will: significantly reduce transmission congestion in interstate commerce; protect or benefit consumers; are consistent with the public interest; and enhance energy independence. The proposed construction or modification must also be consistent with sound national energy policy.

DOE has now completed its first proceeding designating NIETCs, and FERC has finalized its backstop transmission siting regulations. Both DOE and FERC, however, are now embroiled in litigation with states, environmental groups, and land-owner groups seeking to overturn their determinations and regulations. APPA is an intervenor in these legal proceedings, and is generally supporting DOE's and FERC's efforts to implement their legal authorities. The first request to FERC by a transmission owner (TO) to initiate a pre-filing process (a precondition to seeking backstop siting authority) was filed in May, and it already appears that this proceeding will also be very contentious. APPA believes that the thoughtful use of DOE's and FERC's NIETC and backstop siting authorities will improve the bulk transmission grid over time. APPA is concerned that lengthy litigation will discourage DOE and FERC from using their statutory authorities as Congress intended. APPA is also disheartened that some in Congress have sought to repeal these authorities, but is encouraged that they have not been successful to date.

If new electric generation resources, especially renewable resources, are going to be brought to market to meet increasing demand and to address climate-related concerns, substantial new transmission facilities are going to be required. Both the public and Congress must understand the need to balance the concerns of states, land-owners and other groups opposing specific transmission projects against the larger public good. As some in the industry have quipped, “if you are going to love renewables, you can't hate transmission.”

While “congestion” may be the politically correct term to describe the need for transmission upgrades, at least in Kansas it provides little relief for the problems that we face. Even if these “congested” transmission issues are corrected, they only provide partial benefits to the municipals in Kansas. The highest transmission voltage tied to any of our members is 69 kV. Building new 345 kV (or higher) voltage lines in Kansas will do little to solve the local delivery problems where the actual transmission service to KPP is at lower voltages, and no upgrades have been made to these facilities in decades. As I discuss below, even an offer by KPP members to help fund such upgrades, in return for joint transmission ownership rights, has not been sufficient to spur the construction of these needed lower-voltage upgrades.

REGIONAL TRANSMISSION ORGANIZATIONS (RTOS) HAVE NOT SIGNIFICANTLY AIDED IN INFRASTRUCTURE INVESTMENT

APPA and its members have long expressed their disappointment with the current “Day 2” RTOs, primarily the energy, ancillary services and locational capacity markets operated by these RTOs. While much of the attention on these markets has focused on high prices, other features of these markets adversely impact transmission expansion, as I discuss below.

While expressing strong concerns with the centralized RTO-run “Day 2” wholesale power supply markets, APPA does recognize that RTOs provide services that have substantial value. Such positive features include: administration of regional open access transmission tariffs (OATTs) on a non-discriminatory basis; elimination of pancaked transmission rates (allowing transactions to take place over a broader geographic area); and strengthening of regional transmission planning processes. But these substantial accomplishments have been overshadowed by the costs and problems created by the centralized day-ahead and real-time spot markets for energy, ancillary services, and capacity.

APPA is concerned that the operation of such highly complex markets has distracted the RTOs’ attention away from their core mission of ensuring adequate investment in the regional transmission system. RTOs have instead largely relied on the use of “price signals,” such as locational pricing, to achieve needed transmission investment. A central element of RTO-operated energy markets is “locational marginal pricing” (LMP), under which electricity prices set in the RTO’s spot markets vary by system location. When demand for use of specific transmission facilities exceeds those facilities’ physical capacity to move power (known as “congestion”), it is not possible for electricity to reach every part of the system at the lowest overall cost. In the constrained portion of the grid, prices rise when only higher cost generators are able to deliver electricity to the customer, even if generators offering lower prices exist elsewhere in the RTO’s footprint.

Advocates of LMP, including the RTOs and FERC itself, argue that the higher costs charged when congestion occurs on the transmission system provide “price signals” to market participants to fund the construction of new generation and transmission facilities to alleviate transmission congestion. FERC stated over 10 years ago that LMP would “send price signals that are likely to encourage efficient location of new generating resources, dispatch of new and existing generating resources, and expansion of the transmission system.”¹ (Emphasis added.)

To test this theory, Synapse Energy Economics, as part of a 2007 study of LMP, examined at APPA’s request, price trends and planned electricity infrastructure projects in the PJM Interconnection, a large RTO. Synapse found that the areas where LMP prices are the highest do not correspond to the areas of greatest spending on new generation and transmission facilities. The study concluded that there is no evidence that LMP has induced substantial investment in generation and transmission.²

The LMP system can in fact create financial incentives that interfere with the building of otherwise-needed new transmission capacity. Entities that own both transmission and generation facilities may have financial disincentives to construct or expand transmission to remediate congestion. The higher-priced generation located within constrained areas of the grid benefits financially by being dispatched at higher “out-of-merit” prices when lower-priced generators cannot deliver power because of transmission system limitations. In this scenario, the construction of transmission of facilities to relieve this transmission congestion would reduce the profits of the generation units located in the constrained areas. If both the transmission and generation facilities are owned by the same corporate entity (or different affiliates of the same corporate family) the disincentives to construct new transmission facilities are clear.

The RTOs themselves make the claim that the markets produce “accurate price signals that reflect the value of electricity across time and place, revealing both re-

¹In its original November 25, 1997 order accepting the PJM Interconnection’s (PJM) filing to restructure the PJM Pool to implement LMP, the Commission found: “We believe that the LMP model will promote efficient trading and be compatible with competitive market mechanisms. In this regard, we find that the LMP approach will reflect the opportunity costs of using congested paths, encourage efficient use of the transmission system, and facilitate the development of competitive electricity markets. By pricing the use of constrained transmission capacity on the basis of opportunity costs, the proposal will also send price signals that are likely to encourage efficient location of new generating resources, dispatch of new and existing generating resources, and expansion of the transmission system.” Pennsylvania-New Jersey-Maryland Interconnection, , 81 FERC ¶ 61,257 (1997) at p. 81, on rehearing, 92 FERC ¶ 61,282 (2000), vacated and remanded on other grounds, *Atlantic City Electric Co., et al. v. FERC*, 295 F. 3d 1 (D.C.Cir. 2002), on remand, 101 FERC ¶ 61,138 (2002), on rehearing, 103 FERC ¶ 61,170 (2003), on petitioners’ petition to enforce mandate, *Atlantic City Electric Co., et al. v. FERC*, D.C.Cir. No. 97-1097 (May 20,2003)

²LMP Electricity Markets: Market Operations, Market Power, and Value for Consumers, Ezra Hausman, Robert Fagan, David White, Kenji Takahashi, and Alice Napoleon, Synapse Energy Economics, February 2007, at 17-33, available at <http://appanet.org/files/PDFs/SynapseLMPElectricityMarkets013107.pdf>.

source scarcity and transmission congestion.”³ There is no real disagreement that the use of LMPs “reveals” transmission congestion; rather, the dispute is over whether the use of LMP has actually spurred substantial new transmission facilities investments. When discussing actual transmission investments in their regions, RTOs attribute such investments to the success of their regional transmission planning processes⁴—processes that are not necessarily connected to or reliant on the LMP-based markets.

Another claim regarding the benefits of LMP pricing for transmission congestion, recently made by the Compete Coalition, is that “[a]ccurate and transparent price signals allow for better forecasting, thereby removing some of the uncertainties associated with investments in generation and transmission.”⁵ But pricing differentials produced in hourly spot markets, given their short-term nature and substantial volatility over time, are not necessarily the best guide to making very long-lived capital investments in transmission and generation. Other factors, including the regional mix of generation, estimated growth in demands, state renewable portfolio standards and utility resource plans, provide a better foundation for long-term investments.

Market participants in certain regions without Day 2 RTO markets have implemented innovative regional approaches to transmission system management and planning. An example of a promising approach is the ColumbiaGrid in the North-western United States. This is a not-for-profit membership corporation formed in 2006. ColumbiaGrid does not own transmission; its members and the parties to its agreements own and operate an extensive network of transmission facilities. ColumbiaGrid provides single-utility based transmission planning for the combined network of its participating utilities.⁶ In April 2007, FERC accepted ColumbiaGrid’s proposal to coordinate transmission planning and expansion in the Pacific Northwest.⁷ While different models may be appropriate for different regions, new initiatives such as ColumbiaGrid demonstrate that there are effective and consumer-friendly alternatives to the use of RTO-based market regimes to manage regional grids.

APPA has advocated that FERC place a moratorium on the establishment of any new Day 2 RTOs and on the establishment of new RTO-run markets for additional products and services within existing RTOs, unless accompanied by a demonstration of net benefits to consumers from those new markets. APPA also recommends that the current Day 2 RTOs be restructured to focus more on transmission and reliability and less on the operation of markets. APPA believes that electricity should be bought and sold primarily through bilateral contracts, with spot markets being used primarily for balancing and optimization functions. Deemphasizing the operation of complex markets would allow RTOs to focus on their core transmission functions, including independent and collaborative regional transmission and generation interconnection facilities planning. Such planning should involve affected stakeholders, including state authorities, thus building the regional support required to get siting authority for needed new transmission facilities and upgrades.

The Kansas Power Pool originally applied for network integration transmission service (NITS) from SPP in January of 2005. Roughly \$50 million of transmission upgrades were identified at that time before this transmission service could be provided. As of this writing, none of this needed transmission has been constructed, or is being constructed. The odd part to all of this is that several of our members have NITS. These are SPP NITS agreements, with no transmission upgrades needed based upon the municipal generation behind the meter being included as resources for that city. Again, this highlights the problem of existing TOs treating public power utilities as something other than transmission dependent utilities. In this instance, the public power system is billed for transmission service that, in fact, is not provided except on an “as available” basis.

However, during this same time, SPP developed and implemented an energy imbalance market. It is odd that within an RTO, even with the implementation of the stakeholder process, and the separation of generation and transmission, the regional transmission organization operates more as a regional market organization. While

³Progress of Organized Wholesale Electricity Markets in North America, ISO/RTO Council, October 16, 2007, p. 4, http://www.isorto.org/atf/ct/%7B5B4E85C6-7EAC40A08DC3003829518EBD%7D/IRC_State_of_the_Markets_Report_103007.pdf

⁴ISO/RTO Council, October 16, 2007, section beginning on p. 5 titled “Regional System Planning Processes Are Producing Much-Needed Transmission Upgrades”

⁵The Value of Competition and Markets, The Compete Coalition, May 21, 2008, <http://www.competecoalition.com/files/Value%20of%20Competition.pdf>

⁶For more information on Columbia Grid, see www.columbiagrid.org

⁷<http://www.ferc.gov/news/news-releases/2007/2007-1/04-03-07.asp#skipnavsub>

I personally believe “markets” for electric energy are impractical, they certainly are unattainable without adequate transmission.

TRANSMISSION INCENTIVES ARE BEING OVER-USED AS A TOOL TO SPUR NEW
TRANSMISSION INVESTMENT

New Section 219 of the FPA was added by Section 1241 of EAct05. Section 219(a) required FERC to establish by rule incentive-based rate treatments for the transmission of electric energy in interstate commerce by FERC-regulated “public utilities” (this is a defined term under the FPA and generally covers investor-owned utilities, not publicly owned and operated public power systems). The purpose of the incentives is to ensure reliability and reduce the cost of delivered power by reducing transmission congestion. Section 219(d), however, made clear that these incentive rate treatments were to be subject to the requirements of FPA Sections 205 and 206 that rates be just, reasonable, and not unduly discriminatory.

FERC in its Order Nos. 679 and 679-A⁸ fulfilled its statutory requirement to issue a rule regarding incentive-based rate treatments for public utility-owned transmission facilities. In so doing, however, it seemed to regard Section 219 as a statutory requirement to offer a smorgasbord of transmission rate incentives to public utility TOs, including rate of return on equity (ROE) adders, recovery of construction work in progress (CWIP), hypothetical capital structures, accelerated depreciation, and recovery of abandoned facilities costs. Despite the strong concerns expressed by APPA and other consumer-side interests regarding the potential adverse cumulative impact on consumers of offering all of these incentives, the Commission brushed aside such considerations, saying that an applicant would be required to demonstrate that the total package of incentives it sought were tailored to address the demonstrable risks faced by the applicant in undertaking the project.

Unfortunately, it appears that public utility TOs are helping themselves to the incentives smorgasbord, and that the Commission has not taken a sufficiently-disciplined approach to awarding transmission rate incentives. In fact, two of the five current FERC Commissioners, Suedeen Kelly and Jon Wellinghoff, have issued a series of strong dissents to Commission orders granting transmission rate incentives for various transmission projects.⁹ In one of her dissents, Commissioner Kelly stated:

Incentives are to be made available to those special projects that face the types of unique or excessive risks or challenges that incentives can address. [Footnote omitted.] If we award incentives to projects indiscriminately, i.e. to projects that do not face unique or excessive risks or challenges, then “incentive ratemaking” just becomes the “new, normal” rate recovery. I believe this would be unjust and unreasonable because it would result in transmission customers having to pay a premium for the type of service they would, and should, get for their normal rates. Also it would ultimately destroy the purpose of incentives, which is to provide a special spur to bring about change that would likely not occur without them.^[10]

APPA believes that Commissioner Kelly has pinpointed the problem with the Commission’s current approach to granting transmission rate incentives. Transmission rate incentives are becoming the “new normal” standard for transmission ratemaking at the Commission. She and Commissioner Wellinghoff should be commended for drawing attention to this problem, and this Committee should investigate FERC’s ratemaking practices in this area.

The federal government should consider the use of incentives when they would spur construction of facilities that will substantially enhance reliability or provide broad access to more economical power supplies not currently available to the market. If lower cost energy is not available on the regional grid, then the government should incent the construction of those facilities that would make that energy broadly available to end users. Regional assessments of needed new transmission facilities should consider both higher and lower voltage transmission requirements to ensure that reliable and economic power supplies in fact reach retail consumers.

⁸Promoting Transmission Investment through Pricing Reform, Order No. 679, 71 Fed. Reg. 43,294 (July 31, 2006), FERC Stats. and Regs. ¶ 31,222 (2006); Order No. 679-A, 72 Fed. Reg. 1152 (January 10, 2007), FERC Stats. and Regs. 31, 236 (2007); Order on Rehearing, 119 FERC ¶ 61,062 (2007).

⁹See, for example, Baltimore Gas and Electric Co., 121 FERC ¶ 61,167 (2007); PPL Electric Utilities Corporation, et al., 123 FERC ¶ 61,068 (2008); Bangor Hydro-Electric Co., et al., 122 FERC ¶ 61,265 (2008)

¹⁰Commonwealth Edison Co., et al., 122 FERC ¶ 61,037 (2008), Kelly dissent at 1.

PROPOSALS TO MANDATE A LIMITATION ON THE TYPES OF ELECTRICITY GENERATION TO BE CARRIED OVER TRANSMISSION LINES FAIL TO RECOGNIZE THE INTEGRATED NATURE OF THE GRID AND THE URGENT NECESSITY FOR ADDITIONAL TRANSMISSION TO SUPPORT ALL TYPES OF GENERATION

Until most non-hydropower renewable energy can be used reliably at anytime (as opposed to intermittently when the wind blows or the sun shines), base-load generating plants like those powered by large-scale hydropower, natural gas, nuclear energy, and coal must be used to produce electricity and to “firm up” the renewable resource. As the CEO of the North American Electric Reliability Corporation (NERC) recently remarked, renewables “need a dance partner.”¹¹ With that in mind, legislative initiatives that would mandate 75 percent renewable usage for a given bulk transmission line are not feasible from an operational or reliability standpoint. Furthermore, once these lines interconnect to the rest of the grid, such a requirement would be extremely hard to enforce. The laws of physics are such that electrons will flow where they will. Subsequent high voltage additions could well change transmission system configurations substantially, causing changed power flows—some of which would be non-renewable—that even the engineers did not anticipate in advance.

In addition, the variability of generation availability and transmission assets from region to region dictates the need for regional, rather than national, solutions. Even the federal back-stop siting authority that APPA strongly supports as delineated above envisions extensive state and regional consideration before the federal government steps in using its backstop authority. Many of the witnesses at the hearing held by the Committee on this topic in June, including Steve Wright of Bonneville Power Administration (BPA), Rich Halvey of the Western Governors Association, and Bryce Freeman of the Wyoming Infrastructure Authority, provided excellent examples of significant initiatives to access renewable energy at the state and regional levels. APPA members have participated in and will continue to participate in the types of initiatives discussed by these witnesses, as well as others initiated by public power entities.

APPA has strong concerns about congressional mandates to build transmission to support only certain types of generation sources when the focus should instead be on getting transmission built, period. We are especially concerned about imposing mandates on the federal transmitting entities, like BPA, the Western Area Power Administration, and the Southwestern Power Administration, as their 70 year mission and contractual obligation to their customers is to market federal hydropower—a mission that is difficult enough to perform on its own.

REGIONAL PLANNING AND APPROPRIATE REGIONAL COST ALLOCATION STRATEGIES ARE ESSENTIAL TO GETTING MORE TRANSMISSION BUILT

As I have already discussed, transmission improvements will be made where there is the greatest benefit to the regional system as a whole. Because of the physical properties of electricity, an improvement at one point in the regional system can increase (or decrease) system efficiency in a different part of the region. Historically, utilities have made transmission-building decisions based on where the greatest benefits would occur, and these decisions typically have been made in consultation with other regional utilities. This is doubly true because of the substantial political and policy barriers to transmission siting. Successful regional planning has occurred throughout the country, but not at the pace or volume necessary to meet demand for electricity while maintaining high reliability.

Regional planning and support from a broad array of stakeholders is equally important to siting transmission to renewable facilities as it is to traditional base-load power plants. The major difference between base-load power plants and some renewable generation facilities is that often renewable facilities, like wind projects, for example, must be sited remotely from population centers because that is where the resource is located. Hence, an added challenge to siting transmission lines to most renewable facilities is the length of the lines and the remoteness of the locations. Public power systems, like LADWP, have taken a lead role in promoting transmission projects to renewable facilities. Two LADWP transmission projects are in the planning phases that will enable southern California to access thousands of megawatts of new renewable generation capacity. One of these projects is a joint ownership arrangement as noted below:

¹¹Electric Utility Week, July 28, 2008 edition at 13 (reporting on Rick Sergel’s July 20, 2008 presentation to the Collaborative of the National Association of Regulatory Utility Commissioners and FERC on Demand Response).

(1) Barren Ridge Renewable Transmission Project: This project consists of construction of new 60 mile double-circuit 230 kV from a newly constructed Barren Ridge substation to the proposed new Haskell substation. The project also includes reconductoring existing 230 kV line. This project will allow access to over 1200 MW of wind and solar generation resources in the Tehachapi and the high desert near Mohave. The project is in the environmental and permitting process and the first phase of the project is expected to be in-service in 2012.

(2) Green Path North Project: This project consists of the development of an approximately 100 mile high voltage transmission line for the Coachella Valley area to the Hesperia area in Southern California. The transmission system will be interconnected to the Imperial Irrigation District (a public power system), LADWP, and Southern California Edison (an investor-owned utility). The purpose of the project is to provide access to the vast geothermal and solar resource potentials in the Imperial Valley. Development work including preliminary engineering and environmental studies are underway. Depending on various factors, the project is expected to be in-service by 2013.

The manner in which transmission facilities costs are allocated among generators, transmission owners, transmission dependent utilities and other stakeholders should also be determined at the regional level. APPA, along with numerous other electricity stakeholders, strongly supported the language included in Section 1242 of EPAct05 that underscores FERC's flexibility in determining the appropriate transmission pricing methodology, and does not impose the one-size-fits-all mandate that was considered during the lead-up to passage of the bill. While APPA does not always agree with the decisions made by FERC on transmission cost allocation issues, we continue to believe that Congress had it right in leaving these decisions, with appropriate stakeholder input, to FERC.

A number of regions have made substantial steps forward in determining regional transmission cost allocations that will support new transmission construction. For example, in SPP, the SPP stakeholder process has identified the need to support transmission facilities that provide economic benefits to its members. The emergence of wind power in the Great Plains has spurred the need for significant upgrades of the transmission network in order to move this wind energy to market. As a result, a recommendation is being considered by SPP's Board of Directors to socialize the costs of all transmission above 230 kV in its footprint. In addition, a "Balanced Portfolio," described as upgrades that in combination provide equal benefits to costs incurred, is being developed for implementation by SPP. These facilities will target getting renewable resources to market as well as providing the means to move the most economical energy to the end users.

JOINT OWNERSHIP WOULD IMPROVE TRANSMISSION INVESTMENT

Encouraging proportional joint ownership of transmission facilities by those load-serving entities, including public power utilities, providing electric service in a given region is another way to get more transmission built. If the responsibility for building and owning the transmission grid is spread more broadly among those entities serving loads (i.e. demand) in a region, then joint transmission planning will be facilitated, simply because there are more participants at the planning table supporting the needed projects. If NITS customers of a dominant regional transmission provider are encouraged to own their load ratio share of the transmission system, transmission usage and ownership will be more closely aligned, and the frictions between transmission-dependent utilities and transmission owners can be reduced.

Public power utilities have participated in jointly-owned transmission arrangements for many years. One model of joint ownership that has worked for public power is investment in a transmission-only company. A second model is ownership in a shared transmission system. There are two transmission-only companies that are partially owned by public power utilities. These are the American Transmission Company in Wisconsin and the Vermont Electric Power Company. In shared or joint transmission systems, two or more load-serving utilities combine their transmission facilities into a single integrated system. Examples of public power participation in shared transmission systems are found in Indiana, Georgia, Minnesota, and the upper Midwest region.

Unfortunately, not all investor-owned utilities see the benefits of jointly owning transmission facilities with other load-serving entities in their regions. KPP in the past has been asked by a transmission owner (TO) in SPP "what's in it for [the TO]?", and told "we own the existing right-of-way" when discussing the lack of progress on an existing Stipulation Agreement filed at the Kansas Corporation Commission signed by all of the TOs and SPP. KPP is still negotiating with Kansas TOs,

and is hopeful that a final agreement to construct the needed facilities can be reached.

One impediment to expansion of joint ownership is the “private use” restriction imposed on tax-exempt financing that I discuss in more detail below. While other types of financing mechanisms are used when private use restrictions apply, this situation is not ideal from a parity standpoint with investor-owned utilities that have federal financial incentives at their disposal for building new transmission facilities.

REMOVING LIMITS ON THE USE OF TAX-EXEMPT FINANCING WOULD HELP GET MORE
PUBLIC POWER-OWNED TRANSMISSION BUILT

Traditionally, our federalist system of government has respected the right of state and local governments to pursue activities that are in the public interest and the interest of the citizens they serve. Congress has promoted and protected the right of government to issue municipal bonds for “government owned and operated projects and activities.” Public power systems are just that—government-owned and -operated systems similar to other local infrastructure projects such as water systems, prisons, hospitals, and transportation lines.

While outside the scope of this committee’s jurisdiction, APPA believes and desires to emphasize that Congress should continue to recognize a basic tenet of the federal system of government—the constitutional doctrine of reciprocal immunity. Under this doctrine, the federal government cannot tax the interest on obligations issued by state and local governments for public purposes and state and local governments cannot tax the interest on federal obligations.

In addition to continued access to tax-exempt bonds to finance electricity infrastructure, it is important that Congress provide adequate flexibility for public power utilities to partner with private entities in the financing and use of certain facilities, as is discussed above. Congress has recognized this necessary flexibility by allowing a certain amount of “private use” from output facilities financed with tax-exempt bonds. Prior to the 1986 Tax Reform Act, the limitation on private use was set at 25 percent for all governmental issuers. However, the 1986 legislation reduced the amount of private use to 10 percent. In addition to the reduction of the private use limitation from 25 percent, the federal tax code also provides that for certain output facilities—public power and public natural gas generation and transmission facilities—the private use limit is the lesser of 10 percent or \$15 million. Private use restrictions limiting the benefits available to private entities from publicly financed facilities are based on sound and appropriate public policy considerations. However, the restrictions should apply equally to all governmentally financed and operated facilities.

The special \$15 million private-use limitation that applies only to publicly owned electric and gas facilities is not supported by any public policy justification. It may force local governments that provide transmitting facilities to have their surplus capacity sit idle rather than having it sold to others in order to avoid the private use limitation. This provision should be repealed because it is discriminatory and it encourages practices that are neither environmentally nor economically sound. It also discourages an expansion of the joint ownership model that has been so successful in some regions, and could be used to improve the bulk transmission system in others.

IMPLEMENTATION OF THE MANDATORY RELIABILITY STANDARDS INCLUDED IN EPACT05
(FEDERAL POWER ACT SECTION 215)

Lastly, APPA was asked to address the new mandatory reliability standards regime required under EPAct05 in new FPA Section 215. The industry has made great strides since the passage of EPAct05 in implementing this new mandatory regime. NERC has been named the Electric Reliability Organization (ERO) by FERC in Order No. 672, as the statute contemplated. NERC then developed an initial slate of reliability standards, which were largely approved by FERC in March of 2007 in Order No. 693. The industry is currently considering a substantial number of new and revised standards to continue the process of improving those standards, with the goal of enhancing the reliability and security of the bulk power system.

NERC’s reliability standards became mandatory in June of 2007. Those APPA members subject to the mandatory standards have spent considerable time and effort ensuring that they are in compliance with the standards, or that they have a plan approved by their regional entity (the entity charged with on-the-ground enforcement of NERC standards) to come into compliance in a timely fashion. Since violations of the standards can be penalized with substantial fines, concern is substantial that violations are not incurred, or, if they are, are corrected immediately. APPA for its part has expended considerable efforts in the areas of information

sharing, member education, and training to ensure that its members are aware of their responsibilities and that they develop the necessary "culture of compliance."

Ensuring reliability is not so much a one-time goal to be met as an ongoing process where continuous improvements need to be made. APPA supports the unique reliability regime adopted in FPA Section 215, where NERC, as the ERO, works with the help of its regional entities and volunteers in the industry to develop and apply reliability standards, with FERC in a strong oversight role. While there will inevitably be bumps in the road towards reliability assurance, APPA believes that great strides have already been made, and that process and substantive improvements will continue in the future.

CONCLUSION

The major impediment to getting new transmission built continues to be siting, and I urge Congress to support the federal back-stop siting authority included in EPAct05, and to support DOE and FERC where possible as they continue to implement this authority. Because of the local and state opposition to siting transmission lines, as many regional electricity stakeholders as possible should be included in their planning and ownership. Congress should therefore encourage and support joint ownership of transmission and should eliminate financial barriers to such ownership like the private use restrictions for tax-exempt financing. In addition, existing transmission must be upgraded and maintained based on the requirement to serve as opposed to the availability of incentives. Finally, the establishment of RTOs in certain regions has not resulted in substantial new transmission infrastructure investment, although RTOs have helped improve transmission systems from an operational standpoint. However, other models exist, like Columbia Grid, that promise to provide similar operational benefits.

The CHAIRMAN. Thank you very much.

Ms. Tomasky.

STATEMENT OF SUSAN TOMASKY, AMERICAN ELECTRIC POWER, COLUMBUS, OH

Ms. TOMASKY. Thank you, Senator. Senator, thank you so much for holding this hearing. Thank you in particular for inviting us, the American Electric Power Company, an opportunity to testify.

My name is Susan Tomasky. I'm President of AEP Transmission. That's the organization within AEP that operates the Nation's largest electricity utility transmission system.

Our system is a 39,000 mile network which crosses 11 States. At its core we have 2,100 miles of 765 Kilovolt transmission, extra high voltage, transmission lines. Those lines in addition to serving our customers effectively for half a century are also now serve as one of the major backbones of the PJM system. We are also committed to the development of additional transmission that we think is necessary for the Nation's future.

Mr. Chairman, you've heard a lot of testimony in this hearing and in your prior hearing about issues that you're facing. What I would like to do is mention what I think are three critical take a ways that from what we've heard that should serve as the foundation as you consider the role of EPACT 2005 going forward and what else needs to be done.

The first is that today's transmission system although it was built for different purposes over quite a long time ago for the most part, has actually served our Nation pretty well. In fact it served it under very different conditions than it was originally built for. We obviously adjusted to the demands of a competitive market. That's actually required us to change a lot of the operational paradigms.

Through incremental investment the system does reasonably well, particularly with the added requirements around reliability

and the functioning of the RTOs such as PJM. Nevertheless we find ourselves in the need for significant additional investment going forward. The critical question is what will that investment be. What vision of the transmission future will we deploy as we make that investment?

The second critical point I think we've learned is that our energy supply future is intimately tied to the future of the transmission system. We simply cannot hope for the large integration of new, cleaner resources unless our ambitions for the transmission system actually match our ambitions for that new energy supply. We need a system that deals, as has already been suggested, with the variability of wind and other renewables.

Equally important we need a network that has the ability to support the intermittency of those renewables with additional base load capacity. As you go forward, you are going to be making some critically important decisions about what that supply is going to look like as you look at climate change legislation, as you look at renewables. It's extremely important as you do that that you not forget the importance of transmission to that future.

The third point is that we have a great sense of urgency around these other issues. But we do not have the same sense of urgency around transmission. Unless we do the two together, it's not going to work.

Senator Murkowski made a point that disappointed me when she said transmission isn't sexy. I actually told my mother when I took this job that it was. So if we could keep that in this room, I'd really appreciate it.

[Laughter.]

Ms. TOMASKY. The reality is however, that it is a critically important part of our future. There are some things that aren't impediments to moving forward.

One is that we actually have made huge progress in understanding how to plan these systems. The RTOs know a great deal. The utilities cooperate with that. States play an extremely important role in a lot of the regional planning activities.

We also have excellent technology. We've included in our testimony the vision of an interstate system that is primarily based upon 765, which we think is clearly the most efficient technology for moving power over long distances and integrating a great deal of load, a great deal of sources. Whether we follow that concept or another concept we clearly need a vision of a system of transmission that is like the interstate highway system.

It will be built over time. It will be done collaboratively. But we do have the ability to figure out how to do that.

The other thing that we have is capital. Private capital will flow to this industry. Particularly in the regulatory framework that we've seen from FERC if the incentives are available to compensate for risk and the cost allocation issues that Chairman Hoecker talked about ultimately are resolved.

What we really don't have is a process, is a workable, Federal process for bringing all these issues together and to resolve the conflicts that are going to inevitably arise when you make these very difficult decisions. This is not a problem with a lack of will for the most part in many States. It is a problem, as Chairman

Kelliher has said, of the purpose. We have to recognize that we need a purpose, a national commitment to build this transmission system. We need a mechanism for dealing with the really important, underlying, conflicting issues.

I'd like to close by pointing out that Senator Casey mentioned three things that he thought were incredibly important to be accomplished as we site lines going forward. While this is probably not the solution he would embrace, I actually think that a strengthened Federal siting authority actually provides the vehicle for addressing those things. He said it's important that we have substantial public meetings.

If you look to the kind of process that happens in the natural gas act, that is precisely what occurs. We need to consider alternatives. Indeed when you use an environmental impact statement process which is part of the Federal siting process you look at all those alternatives.

That we also need to think about renewables. As I've suggested earlier it is really only this major system that can introduce renewables on a large scale and connect to the load that will make a meaningful difference in the contribution of renewables and alternatives going forward.

So with that I will close. I will say that we have the opportunity to do all this. This industry is certainly prepared to move as is our company. We simply ask for the best tools possible in which to get it done. Thank you.

[The prepared statement of Ms. Tomasky follows:]

PREPARED STATEMENT OF SUSAN TOMASKY, AMERICAN ELECTRIC POWER,
COLUMBUS, OH

Good morning Chairman Bingaman, Senator Domenici and distinguished members of the Committee on Energy and Natural Resources.

Thank you for holding this hearing today and allowing me the opportunity to offer the views of American Electric Power (AEP) on the state of the nation's transmission grid and the implementation of the 2005 Energy Policy Act (EPA2005) transmission provisions.

My name is Susan Tomasky and I am President of AEP Transmission, the organization within AEP whose 2,000 employees operate the nation's largest electricity transmission system. Three Regional Reliability Organizations oversee our vast system and we are members of three Regional Transmission Organizations (RTO). The AEP system is a 39,000 mile network, integrating power delivery across 11 states. Our network includes over 8,000 miles of extra high voltage (EHV) lines. The core of our EHV system in the eastern United States is a system of 2,100 miles of 765-kilovolt (kV) transmission lines, clearly the most efficient way to move power over long distances and integrate multiple power generation sources. This system now serves as a backbone of the PJM interconnection, fostering efficient power flow within that region and, through extension, linking our region to neighboring systems in all geographic directions. AEP's transmission system directly or indirectly serves about 10 percent of the electricity demand in the Eastern Interconnection, the interconnected transmission system that covers 38 eastern and central U.S. states and eastern Canada, and approximately 11 percent of the electricity demand in ERCOT, the transmission system that covers much of Texas.

In today's hearing, we have been asked to help review the state of the nation's transmission grid and the effectiveness of EPA2005 in ensuring that the future system is adequate to meet the nation's energy needs going forward. It is our view that while the current system has served the nation well in the past, we face an urgent need for additional investment to create a robust and efficient grid that can integrate multiple new resources, including renewables, and deliver power across a broad geography. EPA2005 is a vital first step toward that end. But if we are to fulfill our emerging national vision of a more secure, environmentally sound electric power supply system, we need a workable and timely federal process that ensures that we can build a transmission system that meets the needs of our energy future.

This means that the Federal Energy Regulatory Commission (FERC) should have meaningful authority to site extra high voltage transmission facilities and provide the financial basis, through incentives and broad cost allocation, to ensure that the system is built.

THE NATION'S CURRENT TRANSMISSION SYSTEM CANNOT KEEP UP WITH FUTURE NEEDS

In our view, the nation's transmission system today is sound, but taxed, and very much in need of new investment. Today's system is, in fact, an interesting paradox: it was designed and built over the middle part of the last century, primarily to link generation resources and customer distribution systems over relatively small geographic areas with the goal of meeting the electricity needs of a particular utility, often within a particular state. Over time, we have seen broader integration of these resources and there are now some more robust systems that integrate resources within larger regions. We have also made huge advances in coordination of these systems to achieve, with some rare though noteworthy exceptions, a very high level of reliability.

Although the transmission asset base has not changed much in recent years, the use of this system has changed a great deal. Of course, demand has grown steadily, and in some areas dramatically. As a nation, we have made public policy decisions to create wholesale power markets that force the system to be used more efficiently and to its maximum capacity in some instances. And, as electricity has become the lifeblood of our digital economy, we have pushed our expectations for reliability higher as the system grows older.

All in all, the system built several decades ago has responded quite well to modern demands. However, there is no question that the existing transmission system is overloaded, with congestion losses increasing and reliability degraded in some locations during certain times. As an operator, we are seeing the need to replace major equipment. Supply chain lines are long (it can take several years to obtain certain kinds of critical equipment) and we are finding it difficult to take critical facilities out of service just to get the work done. Simply put, there is no question that new investment is needed and this very much has the industry's attention. From 2000 to 2006, electric companies invested more than \$37.8 billion in the nation's transmission system. Current estimates are that the utility industry will invest \$31.5 billion in transmission facilities in the period of 2007—2010. [Edison Electric Institute website, Actual and Planned Transmission Investment by Shareholder-Owned Electric Companies].

A piece of good news is that, even in these difficult financial times, there is a fair amount of capital available for regulated utilities wishing to make this investment. The challenge is that, as it stands today, most of this planned investment is what the industry would call "reliability spend", i.e., investment to make sure the current system works and meets ordinary growth in demand. While this investment is critical, it is also incremental. It won't be sufficient to meet the needs of our country's energy future.

The job of our industry is to run the current system as reliably and efficiently as possible AND to build the system that meets the needs of our energy future—a future that meets growing demand for electricity while addressing the challenges of climate change and the need for greater energy independence. I expect that this Committee will find itself deep in debate over the coming months about how to meet those challenges. But whether the policy choices favor renewables, nuclear, advanced coal, natural gas or all of the above, we need a transmission system that integrates and interconnects these new, better power sources as efficiently as possible. In our view, this means that we must overlay our current transmission system with an extensive system of EHV transmission facilities. Such a system would be designed to bridge geographic distances (sometimes very long distances) with minimal lines losses so that wind resources, for example, could be made available to support load that is geographically remote. Properly designed, the system should provide maximum flexibility to bring on new sources and meet new load, and should complement and take maximum advantage of the underlying transmission resources already at our disposal.

We believe that our national goal should be the development of an EHV interstate transmission system, along the lines of the interstate highway system that has fired the country's economic growth over the last 50 years. This system would build upon the EHV infrastructure and overlay the existing lower voltage transmission system, relieving major congestion, improving reliability and enabling the development of new resources. But to do this, we will need a firm national policy that supports and facilitates the timely planning and construction of a system that meets these multiple purposes.

EPA2005 is an important step towards to this goal, but it falls short of providing the full scope of federal authority necessary to permit our industry to provide the country with the transmission system it clearly needs. I hope the Committee's review of this Act provides the foundation for strengthened federal authority to ensure that the transmission system of the future, and therefore the electric power system of the future, can become a reality.

THE TRANSMISSION SYSTEM OF THE FUTURE MUST BE ABLE TO INTEGRATE
RENEWABLES AND OTHER NEW POWER SUPPLY SOURCES EFFICIENTLY AND RELIABLY

One essential feature of electricity is that it moves at roughly the speed of light and therefore is consumed at almost the same instant it is produced. As a result, transmission of electric power is actually a kind of balancing act—power supply and consumption have to be in balance at all times, which means that the system must be designed and operated to deal instantaneously with changes in one or the other side of the equation. For all the environmental virtues of renewables, they do present some challenges when we seek to integrate them on a broad scale into the supply network. Wind for example, though available in large volumes in the central part of the country, is variable: it blows when it blows, which may or may not be when we need it. That variability challenges the balance of the simultaneous supply-demand equation. While a lot of work is being done to investigate the feasibility of large scale storage to address this issue, the fact is that for the foreseeable future integrating large quantities of wind will require significant additions to the existing network both to transport power over long distances and to provide support for the system as the wind comes and goes.

AEP has studied this issue extensively, and in partnership with the American Wind Energy Association (AWEA), we have developed a conceptual plan to provide cost-effective connections from areas of high wind potential to major load centers using a 765 kV backbone system. The map* below shows the scale of transmission projects necessary to move electricity from our nation's vast wind resource to major load centers.

In this study, we focused on EHV, primarily 765 kV transmission lines, as the solution of choice for meeting our nation's "superhighway" transmission needs. EHV transmits large quantities of energy vast distances, with reduced loadings on lower voltage transmission and with significantly lower line losses. At the same time, it increases transmission performance and reliability for large geographic regions and across multiple states and regions. By establishing EHV as the backbone of the bulk power system, we will also enhance operational performance and reduce congestion, while enhancing fuel diversity and ultimately strengthening our energy security. In addition, 765 kV transmission requires significantly less right-of-way than is used to move comparable amounts of power at lower voltages, and it does so on a more cost effective basis.

This conceptual plan is designed to permit wind to supply about 20% of the nation's electricity needs by the year 2030, at a cost of about \$60 billion in today's dollars. Obviously, the system that is ultimately developed would move forward over many years, developed by many different transmission providers and guided by vigorous regulatory and planning processes. The costs would probably increase somewhat over time. Even with these uncertainties, however, we believe very strongly in the fundamental premise of this concept: that our nation can have an interstate transmission system that effectively integrates significant new, cleaner resources to meet our national energy policy goals. If it is urgent that we press forward with developing cleaner, more secure sources of power, then it is equally urgent that we build the transmission system that can deliver this power to customers. For that reason, we believe that this Committee should assess the EPA2005 by considering its effectiveness in helping us achieve these goals.

2005 ENERGY AND POLICY TRANSMISSION PROVISIONS MUST BE STRENGTHENED TO
ENCOURAGE DEVELOPMENT OF A NATIONWIDE EHV TRANSMISSION NETWORK

From the perspective of improving the nation's electric transmission grid, EPA2005 breaks some very important policy ground. It acknowledges that our bulk power system had evolved into a vibrant network connecting generation and consumers across many states. For the first time, electric reliability standards are mandatory, with FERC exercising jurisdiction over all users of the bulk power system. The Act is also important in recognizing that a federal approach to siting of new transmission is vital to the economic health of the nation. It gives the Department of Energy (DOE) some authority to identify high priority transmission lines—the

*Map has been retained in committee files.

“Electric Transmission Corridors”—and gives FERC backstop siting authority to facilitate the development of needed transmission facilities that are not moving forward within the framework of state siting laws. The Act also empowers FERC to ensure cost recovery and provide rate incentives to encourage the development of interstate transmission facilities.

We are now three years from enactment of this historic legislation and the time is right to take stock of where we are today. There are some important items in the success column. DOE has acted to designate some national interest corridors, clearing the way eventually for federally-facilitated siting, if necessary. I would also highlight FERC’s critical efforts to ensure transmission construction through incentives designed to compensate for the risk involved in multi-state transmission development and the technological innovation required to develop increasingly efficient delivery systems. As a result of those incentives, private capital is ready to flow to such projects, if there is a siting process that permits them to go forward.

In those three years, we have also seen many transmission sponsors moving to propose the kind of projects we need to see. AEP is actively pursuing a number of major EHV projects with utility partners where new transmission is critically needed, either to enhance and expand the existing EHV system or to harvest wind resources. However, even as we talk about ever increasing congestion on the current system and the need for rapid deployment of renewables, there is little, if any, steel in the ground. In our view, this has a lot to do with the fact that, notwithstanding FERC’s backstop authority, we do not yet have a workable federal process for coordinating the development of transmission across regions and for ensuring the timely siting of the extra high voltage multi-state transmission system.

There is such a process in place for natural gas pipelines, under the Natural Gas Act. Indeed, the natural gas pipeline network we have today that moves natural gas from the production areas to the distribution systems around the country was built because a federal process was available to sort through the many important competing local and national public policy issues and ultimately determine reasonable rules under which such facilities could be built. In our view, we need a similar process to facilitate the siting of EHV transmission facilities. We do not expect that such a process would be easy; these are important and difficult decisions and a wide range of issues must be taken into account to address legitimate landowner and environmental concerns. We also recognize that planning these facilities is complex and will require the coordinated effort of many parties, including state commissions, RTOs, reliability organizations and other affected utilities. However, it is hard to imagine that we will break through the logjam of competing interests if we don’t have a federal forum at the FERC to resolve conflicts, with the express goal of ensuring that we can build the transmission we need to meet the nation’s long term energy policy objectives.

We also encourage the Committee to look at other issues necessary to ensure the successful build out of the transmission interstate superhighway. For example, it will be important to recognize that there is substantial work already being done across the country by individual utilities, state commissions, RTO’s and reliability councils to plan the transmission system of the future. If FERC were empowered to make siting decisions, it could use the product of these collaborative planning efforts as a basis for expedited consideration. Similarly, if we are going to build an interstate transmission system that provides benefits across broad regions, it will be necessary to have in place relatively simple and predictable cost allocation policies that ensure that everyone who benefits from the system shares in the cost of its development. In addition to mitigating the cost per customer, principles that assure broadly defined cost responsibility will reduce the vigorous attempts to shift and re-shift costs among groups of customers that today are the hallmark of rate regulatory proceedings.

The plea in this testimony is quite simple: we urge you and the Congress to recognize that we must take action, possibly very difficult action. This company and, I am quite confident, our industry as a whole, stand ready to commit the resources and talent necessary to build the interstate transmission system that we need to meet the complex demands of our nation’s energy future. We strongly urge you to give us the tools we need to do it.

Again, Chairman Bingaman, thank you for holding these hearings. We look forward to working with you and your Committee to find solutions that address the transmission needs of our country.

I am happy to answer questions.

The CHAIRMAN. Thank you very much.
Mr. Loehr.

**STATEMENT OF GEORGE C. LOEHR, REPRESENTING
PIEDMONT ENVIRONMENTAL COUNCIL, ALBUQUERQUE, NM**

Mr. LOEHR. Thank you, Senator. I think transmission is sexy too. I've spent more than 45 years of my life working in electric power transmission and bulk power system reliability. Now just to give you a rough idea of my background I worked with—I was Executive Director of the Northeast Power Coordinating Council until my early retirement 11 years ago.

Now I'm an outside Director on the Board of the Georgia System Operations Corporation. I chair the New York State Reliability Council. I do consulting. I teach courses on power systems. I've written for most of the trade magazines and I occasionally give talks at conferences.

A number of things—oh, I should also add that the opinions I express today are solely my own and don't reflect the opinions necessarily of any of my current clients or employers of the past or present.

There are a number of effects came about because of the 2003 blackout. Some have been mentioned already today. Personally the most important one to me is that it impelled me to write my novel, *Blackout*, which I did. But some people might think that the passage of the Energy Policy Act was actually more important than that.

There are two aspects of EPACT that I think are important to us today.

One is that it imposed mandatory standards on all participants in the electric power industry in the United States and Canada.

The second is it led to the Department of Energy doing its 2006 congestion study and come up with a corridor designations that we heard discussed from both sides today.

A problem I have with this report is however, is that it focused almost exclusively on transmission. I'd like to point out that no kilowatt was ever generated by a transmission line. Transmission lines are designed to get kilowatts from where they're produced or manufactured in power plants to load centers and to customers. They don't produce electricity.

More important though there seems to be a confusion in a lot of the work we do, both in the Federal Government, the States and in the industry itself between economics and reliability, between transmission that might be needed for economics and transmission that might be needed for reliability.

Congestion, which is a term that we've heard often in these hearings, is an economic concept. It means that the cheapest generation from some power plants, sometimes of the day, or sometimes of the year, cannot find their way to the load centers where they're needed. So that perhaps more expensive generation has to be run.

As long as there is more expensive generation closer to the load centers and that can be run to supply the load than this is not a reliability problem at all. It's strictly an economic problem. The focus on transmission is leading us perhaps to design long transmission lines which are not needed for reliability but may in the long run decrease our reliability.

They can act as magnets to power plants to be located at remote locations from the load centers. When urban load centers are more

dependent and have a higher percentage of their electrical requirements have to be supplied over long lines from power plants hundreds of miles away. That's an increased vulnerability to blackouts.

It's also a national security issue potentially because that could be interrupted by terrorist attacks on the transmission grid. It would be like you had a toaster and instead of plugging it into your kitchen outlet you would run a long extension cord to your friend's house a block or two away and power it from there. It's just less reliable.

To enhance reliability and security it's best to locate generating sources, the sources of power and other resources closer to the load. But that's not always practical. I'm talking about local generation distributed generation and DSM.

Now some people would say that the addition into transmission will always increase reliability. But that's not true. It increases the transmission transfer capability of the system.

It makes more power able to flow over the grid. But the only thing that will increase that will really improve reliability is to make more stringent standards. We have standards today if you wanted to make the grid really more reliable you would ask for more stringent standards.

Reliability is a function of the standards used, not the amount of wire in the air. Adding transmission could actually weaken reliability because you would wind up with more generating plants further from the load instead of close by. The urban load centers would be dependent on long, hundreds of miles of transmission lines more than they are today.

One of the problems I've seen in looking at some cases in recent, last few years, is that I see some people trying to prove the need for a new transmission line on a reliability basis when it's really needed for some other, or desired for some other purpose. One thing that's done is sometimes reliability standards have been misrepresented. Sometimes techniques that are permitted by the standards and widely used in the industry have been ignored. Sometimes blackouts scares have been used to try to frighten public officials or the public into approving things. These are wrong.

Where do we go from here? Since the DOE congestion study is being redone as required by EPACT for 2009, we have a chance to get it right or at least get it better. I think we should address grid issues in a comprehensive manner, consider local distributor generation, DSM, and so on as well as transmission.

We need to separate the reliability needs from the economic wants. If we're going to build a power plant, if we want to build transmission to go from coal fired plants in one part of the system to urban load centers in another, let's say that. Put it up front and let public officials and the general public decide that on merits.

Same thing if we want to build a transmission line to deliver renewable energy. Say wind farms from a remote location. Let that be said up front. Let the people and their representatives decide that on its own merit.

But when a facility is needed for reliability, let's say that. All the remedies need to be considered. We need to be, I think, up front in what the real needs are.

I would like to close my comments with a citation of the 18th century Anglo-Irish author and politician, Edmund Burke. “All that is necessary for the triumph of evil is for good men to do nothing.” Let’s resolve not to “do nothing.” But let’s be sure that whatever we do, we do the right thing.

Thank you very much. I appreciate the opportunity to address you. I want to particularly thank, as an adopted citizen of New Mexico for the last 11 years, I’d especially like to thank Senator Bingaman and Senator Domenici for their excellent representation of my new State in the U.S. Senate. Thank you.

[The prepared statement of Mr. Loehr follows:]

PREPARED STATEMENT OF GEORGE C. LOEHR, REPRESENTING PIEDMONT ENVIRONMENTAL COUNCIL, ALBUQUERQUE, NM

I wish to thank the members of the Energy and Natural Resources Committee for the privilege of speaking to you about several issues of great importance for the future of our nation, and of great concern to me personally. I especially want to express my thanks and appreciation to Senator Bingaman and Senator Domenici of my adopted state of New Mexico, and to Senator Casey of Pennsylvania—along with their staffs.

My name is George C. Loehr, and I’m an engineer with more than 45 years of experience in the electric power industry. My primary expertise is in bulk power transmission system planning and analysis, and electric power system reliability. I was deeply involved in various post-hoc studies following the major blackouts in 1965, 1977, and 2003.

I worked as Executive Director of the Northeast Power Coordinating Council (NPCC) from 1989 to 1997, and was very active in regional, national and international activities. I took early retirement from NPCC in 1997, and now do management consulting, appear as an expert witness, write, and teach a variety of courses on power systems.

I have been a Vice President and member of the Board of Directors of the American Education Institute (AEI), and a charter member of Power Engineers Supporting Truth (PEST). At present, I serve as Chair of the Executive Committee of the New York State Reliability Council (NYSRC), and as an Outside Director on the Board of Directors of the Georgia System Operations Corporation (GSOC).

I hold an advanced degree in English Literature along with my Bachelors in Electrical Engineering, and have been deeply involved in the arts for most of my life; for example, I recently published my first novel, *Blackout*, available through <lulu.com>.

A one-page bio is appended to this statement.*

The opinions I express in my testimony are entirely my own, and do not necessarily reflect the views of any of my employers or clients, past or present.

Arguably, nothing is more critical to the future of the United States and its citizens than a reliable electric power system. It can be said without exaggeration that electricity is the bloodstream that sustains our nation and allows it to live and prosper. As the major blackouts of the past have demonstrated, any interruption to power supply adversely affects our economy, our safety and comfort, and our national security. And the most vulnerable part of our power supply is the high voltage bulk power system—the grid. However, it is not the only critical part of a reliable electric system.

Actually, there are three separate “grids” in the continental U.S.—four, if we consider Canada as well. The Eastern Interconnection is the largest, stretching from the Atlantic Coast roughly to eastern Montana, Wyoming, Colorado, and New Mexico. It includes the Canadian Maritime Provinces, as well as Ontario, Manitoba, and Saskatchewan. The Western Interconnection runs from there to the Pacific Coast, and includes the Canadian provinces of Alberta and British Columbia, as well as a small portion of the northern Baja in Mexico. The ERCOT Interconnection comprises approximately 85% of the state of Texas, and the Quebec Interconnection consists of that province in its entirety.

The passage of the Energy Policy Act of 2005 (EPAct) was heralded as a major step forward in improving the grid and reducing the likelihood of large blackouts. One drawback, however, is its almost exclusive focus on transmission. It does not

*Document has been retained in committee files.

address generating capacity sited close to the load centers, or demand side management programs. These strategies are often preferable to transmission as a means of improving overall system reliability. They have the added benefit of adding to the system's installed reserve margin. My own experience over the years has indicated that a certain minimum amount of capacity—in the neighborhood of 80% of the peak demand—must be located within a load center to provide voltage/reactive power support, black start capability, network security, etc.

If we wish to address electric power energy issues, we must address them in a more comprehensive manner. At present, the EPAct, and policies adopted thereunder, encourages the construction of new transmission not needed for reliability. It subsidizes remote generators, discriminates against local and distributed generation and demand side resources, forces many customers to pay for someone else's benefits, increases the likelihood of blackouts, and makes our grids more vulnerable to terrorist attack.

I believe that decisions on whether particular transmission lines are needed for reliability are best addressed by the states and by the eight existing regional reliability councils. They have consistently done a good job on this in the past. I do not believe that either DOE or FERC has the experienced staff or other resources to do this as well as the regional reliability councils and the states.

Since the passage of EPAct, some misguided proposals have been made to advance corporate agendas rather than serve the well-being of ordinary customers—mainly by trying to get proposed high voltage transmission lines approved as essential to reliability. The most significant are:

- The confusion of reliability with economics—of reliability needs with economic wants;
- The assumption that the mere addition of transmission will improve grid reliability. It won't. In fact, more transmission can actually degrade reliability if it is used to accommodate higher power transfers over long distances;
- The misapplication of national reliability standards promulgated by the North American Electric Reliability Corp. (NERC), the organization designated by the Federal Energy Regulatory Commission (FERC) as the Electric Reliability Organization (ERO) mandated by EPAct;
- Blackout “scare tactics” intended to frighten customers and public officials, compelling them to endorse the construction of facilities or implementation of policies which are not required to preserve or enhance reliability.

Because of the confusion between economics and reliability, officials often commingle both inappropriately. A prime example is the 2006 Congestion Study conducted by the Department of Energy (DOE), as mandated by EPAct. [An updated 2009 Congestion Study is now under way.] As a result of its 2006 study, which did not properly consider non-transmission alternatives, the Department designated certain National Interest Electric Transmission Corridors where, according to DOE, consumers were adversely affected by transmission congestion or constraints. But the DOE's failure to properly consider non-transmission alternatives means that the congestion study has not even established economic congestion. In addition, congestion or constraints do not equal low reliability. Neither the 2006 study, nor the corridor designations, bear any resemblance to actual reliability problems. Economic wants were misrepresented as reliability needs. Reliability depends on standards, not the ability to move every megawatt from any generator anywhere on the system to any load center anywhere else on the system. Because the 2006 Congestion Study is fatally flawed, and does not draw a proper distinction between reliability and economics, it should not be used as the basis for approving new transmission lines that have been denied by the states.

In the deregulated electric power industry, the cost of new bulk power transmission facilities is often “socialized” if it can be shown that these facilities are needed to maintain reliability—to satisfy NERC reliability standards. “Socialization” means that the cost will be proportionally distributed among all customers within an Independent System Operator (ISO) or Regional Transmission Organization (RTO). If a reliability need cannot be proven, the cost will usually be assigned to those entities which will gain from the new facility. For example, if a new line is desired to allow the construction of new generating plants far removed from the load centers, and facilitate the transfer of their electrical output to the load centers, then clearly those generators will gain. But, if a reliability “need” could somehow be proven, the cost of the line would be borne by all customers in the region—an indirect but very real subsidy to the remote generators. Further, the skewing of costs and benefits would penalize resources located close to the load centers. It would also encourage the development of remote generating resources and discourage the develop-

ment of more local or distributed generation, or demand side management programs.

The following points are generalizations derived from actual cases presented over the past several years.

In order to “prove” a reliability “need,” some have misrepresented and misapplied the national reliability standards promulgated by NERC and supported by FERC. This misrepresentation sometimes involves ignoring key provisions of a national standard. For example, one of the key NERC planning standards calls for testing the system for the outage of a critical facility, allowing time for manual system readjustments to compensate for the outage, and then applying a second critical outage. The system must be designed to survive this sequence of events. However, some parties seem to have deliberately ignored the provision for manual system adjustments. This has the effect of greatly overstating the adverse consequences of the contingencies, in effect subjecting the system to two simultaneous contingencies. This, in turn, can indicate a failure to meet reliability standards—requiring a transmission reinforcement which is not really needed.

An even simpler example is the manipulation of generating units in the ISO or RTO queue in such a way that some committed units are excluded from planning studies. In some cases, units well along in the process have been deliberately excluded from studies because they would solve a reliability problem, while others at the same place in the queue were included, precisely because they exacerbate a reliability problem. In my opinion, this makes absolutely no sense.

Similarly, some have ignored readily available techniques permitted by the standards and widely utilized throughout the industry. They resist simple, straightforward fixes such as the addition of reactive power support, correction of minor limitations on lower voltage facilities, modification of outdated configurations, redispatch of generation, or manual load shedding following a contingency—all of which are permitted by the NERC standards and widely used in the industry.

Another device used by some to allege a reliability need when none really exists is to base system simulation studies on extreme conditions vis-&-vis generation dispatch. They will stubbornly insist on economic dispatch as a kind of mantra, ignoring the simple expedient of transmission constrained dispatch—using “out of merit” generation—to essentially replace less expensive remote generation with generation or demand side resources closer to the load, in effect working around any alleged transmission bottleneck by replacing remote generation with slightly higher-priced local resources. Many U.S. systems routinely operate in this manner. But some who are intent on “proving” a reliability need in their planning studies will refuse to make even minor adjustments to their initial dispatch in order to solve apparent reliability problems.

Those who misapply the reliability standards will often argue that NERC standards require that each ISO, RTO and transmission owner establish procedures that “stress” the transmission system in its planning studies. That’s correct. But NERC standards do not require that the ISOs, RTOs and transmission owners use unrealistic base conditions, dismiss simple and obvious solutions to reliability problems, or ignore important provisions of the standards like manual system adjustments.

Some will maintain that the addition of new transmission facilities alone will inevitably increase reliability. This seems like common sense—but it’s wrong. Addition of new transmission facilities will increase transfer capability, but reliability can only be improved by making the standards themselves more stringent. Reliability is a function of the standards used, not the amount of wire in the air. Further, transmission additions will not increase the reliability of the system if the increased transfer capability is used to accommodate increased power transfers. The same reliability standards would still be in place. The transmission transfer capabilities would be higher, but the higher transfer capability would simply be used to carry higher long-distance power flows.

There’s another factor to consider. If more generation is built in remote areas, and less generation and other resources are built close to load centers, then the load centers will be increasingly dependent on distant generating capacity—located perhaps hundreds of miles away. It would be like running a long extension cord to a friend’s house a block or two away to power your toaster, instead of plugging it into an electric outlet right in your own kitchen. The more major cities depend on long transmission lines, the more subject they will be to power outages and blackouts due to major contingencies on the transmission system. Indeed, this constitutes a national security problem, since these urban areas would be more at risk from terrorist attacks on transmission facilities.

Unfortunately, a lot of scare tactics have been used to justify proposed transmission lines. Perhaps the most egregious strategy used by those promoting new transmission when it really isn’t needed for reliability involves raising the spectre

of massive blackouts. The August 14, 2003 blackout has often been cited, for example. Even the California rotating blackouts of the 2000-2001 period have been mentioned. These incidents have no bearing on any of the cases I've seen. The 2003 blackout was the result of too many control areas (now known as "balancing authorities") in too small a geoelectrical area—so small, in fact, that none of them realized that a series of unrelated contingencies across a wide area over a four hour period was leading to a major interruption. In California in 2000-2001, poor state regulations, unscrupulous market manipulation, and unethical (sometimes illegal) activities by companies like Enron, all combined to manufacture an apparent shortage of generating capacity. No capacity shortage existed—nor was there a "blackout" per se. Brownouts and rotating feeder outages were necessary because of the market manipulation, but no widespread cascading outages occurred.

Let's think about how real-life systems would deal with situations involving overloaded transmission. System operators in real-time control centers act as balancing authorities over large geoelectrical areas, and would recognize any potential overload situation. More important, they would never operate the system in a mode where a first contingency would bring about overloads, low voltages, cascading outages, instability, system separation, or loss of firm customer load. That's the "Prime Directive" of every system operator. The bulk power system must always be operated such that, if any contingency specified in the applicable standards or criteria were to occur (e.g., a fault or short-circuit on a high voltage transmission line), the system would experience no overloads, low voltages, cascading outages, instability, system separations, or loss of firm customer load. In fact, to operate in any other way would be a violation of NERC's Operating Standards, subject to fines of up to \$1 million per day.

Blackouts are usually caused by contingencies more severe than standards/criteria, by equipment failures, control system problems, human error, or by some combination of these. They always involve a break-up of the bulk power transmission system. Blackouts are not caused by shortages of generating capacity. Nor are they caused by an inability to transfer as much power as some might wish from remote locations to load centers. Blackouts can rarely be anticipated. They are almost always unexpected, and can happen at any time—few have occurred at or near peak load, for example, or coincident with a shortage of generating capacity. They develop in seconds or fractions of seconds rather than hours or days.

There's another important point. The mere fact of adding transmission does not of itself increase reliability. Consider two hypothetical transmission systems: one a system with a lot of transmission lines, but planned and operated to less stringent reliability standards; the other a system with very little transmission, but planned and operated to more stringent reliability standards. The first system would be less reliable than the second system, because it uses less stringent reliability standards. As I said earlier: Reliability is a function of the standards used, not the amount of wire in the air.

Even if both systems were planned and operated to the same reliability standards, the system with more transmission lines might still be less reliable than one with less. This is because the addition of new transmission lowers the equivalent electrical impedence across the grid, in effect making it electrically smaller. Thus a given contingency could have a more widespread effect. For example, if Philadelphia is electrically closer to Chicago, a major disturbance on the grid in the Chicago area is more likely to cause outages in Philadelphia—and vice versa. This may help explain why the Aug. 14, 2003 blackout affected a much larger area than the November 9, 1965 blackout.

Again, transmission additions will not increase the reliability of a system when the increased transfer capability is used to accommodate increased power transfers between remote generating units and load centers.

To ensure reliability of the bulk power system, Congress would need to comprehensively address electric power supply issues. Congress would need to encourage local power generation and distributed generation close to the demand, and create incentives for conservation and demand side resources. Any consideration of transmission issues should make a clear distinction between facilities needed for reliability and those desired for economic reasons. In particular, economic wants should not be permitted to camouflage themselves as reliability needs. Such an approach would help avoid blackouts, and make our grids less vulnerable to terrorist attacks.

However, as set forth above, I believe the states and the eight existing regional reliability councils are in the best position to ensure a reliable electrical grid.

These are my major points. I would also like to briefly enumerate a few other problems I see, either on the horizon or already with us:

- The “deregulation” or “restructuring” of the electric power industry is part of the problem. In essence, it greatly increased the complexity of the power industry, and added thousands of pages of new regulations. (As a matter of fact, even the term “deregulation” itself is an Orwellian misstatement.) Most important, though, it replaced the former culture of coordination and cooperation with one of competition and confrontation.
- In some parts of the country, there are what I would term “overlapping footprints” among the various entities involved in the planning and operation of both the physical power system itself and its markets. This overlapping is a prescription for blackouts.
- Some control areas, or balancing authorities, are too small. As mentioned earlier, this was arguably the underlying cause of the August 14, 2003 blackout.
- The present growth rate of electric power demand and consumption is sometimes identified as the culprit. Actually, there’s nothing exceptional about present growth rates. The NERC 2006 Long-Term Reliability Assessment (October 2006) reported a forecast U.S. annual growth rate for the period 2006-2015 of 1.9%. This is quite low by historical standards—for example, in the early 1960s, when I began my career, peak loads were growing nationally at a 7 to 7½% rate. That wasn’t a short-term phenomenon, either. According to U.S. Energy Information Administration statistics, retail sales of electricity in 1970 were five times higher than in 1950—a compound annual growth rate in excess of 7%. It doubled again between 1970 and 1990—approximately a 3% growth rate—despite oil embargoes, hyper-inflation, recession, and conservation efforts. The only thing unusual about today’s growth rate is that it’s so low. This, I believe, reflects the efforts of many people—dedicated environmentalists, government officials at both the federal and state level, large commercial and industrial customers, and the general public—to achieve higher efficiencies and genuine conservation. We can all take credit for this significant accomplishment. Bottom line: nothing about current growth rates automatically requires a massive program of new transmission construction.
- People are often told that one “silver bullet” or another will solve all of our energy problems. Examples range from capacity auctions to mandatory standards, from renewable resources to the so-called “smart grid.” While some of these may be valuable in their own right, none can be, as St. Paul might say, “All things to all men.” Simply put, there is no silver bullet.
- Technical expertise—or at least competent, objective technical input—has become almost totally absent in decision making. Decisions are most often made on the basis of economic principles, with little or no consideration (or even knowledge) of the scientific laws that govern electric power systems. The Laws of Physics make electricity flow, not the Laws of Economics. No rules, no regulations or procedures, and no market protocols, can override Mother Nature and her laws. As I tell the students who take one of my courses or workshops: When the Laws of Physics and the Laws of Economics collide, Physics wins . . . always.

Where should we go from here? Frankly, I believe EPCRA is in need of an overhaul. Congress needs to address energy issues—even those energy issues focused on electric power supply—in a more comprehensive manner. At present, EPCRA encourages the siting of new transmission not needed for reliability. By doing so, it subsidizes remote generators, discriminates against local and distributed generation and demand side resources, forces many customers to pay for someone else’s benefits, increases the likelihood of blackouts, and makes our grids more vulnerable to terrorist attack.

I would like to conclude with a favorite and well-known quote from the 18th Century Anglo-Irish author, philosopher and politician, Edmund Burke: “All that is necessary for the triumph of evil is for good men to do nothing.” Let’s resolve not to “do nothing,” but let’s be sure that, whatever we do, we do the right thing.

The CHAIRMAN. Thank you very much. Thank you for your testimony. Thank you all for your excellent testimony.

Let me ask a couple of questions, and then defer to my colleagues here. Commissioner Hoecker, I believe you talked about how we need to figure out a way in our legislation to allow for looking forward rather than looking backward.

That the congestion study, as I understand it, is really sort of a way of looking backward and trying to, you know, we’ve got to have a problem that has already presented itself in order to have the au-

thority to act. Rather than Ms. Tomasky has this proposal for a 765 kilovolt backbone system which is very much the opposite. Looking forward and saying here's what the country needs.

I gather that your point is that we don't have a law, the authority for anyone one to do what she is suggesting might be done. Is that accurate?

Mr. HOECKER. Clearly the corridor process is not a planning device. It's a way of allocating jurisdiction to site particular project proposals. I think this committee and the Congress when they drafted—when they adopted 221 of EPACT, made clear that economic development, energy security, changes in demography, all those things that could affect the evolution of the grid and needed or could be taken into account by the Department when it made its designations.

The Department really didn't do that. It looked at existing congestion on the system. Now in fairness to the DOE, they're not particularly well equipped by either expertise or resources to be a super planner of the transmission grid.

That is something that needs to occur regionally in every part of the country. I mentioned Order 890 as requiring transmission to be planned in an open, transparent process. That involves, not only where transmission is needed, but also how costs are going to be allocated and so forth.

We need to move ahead in that area. If the Congress were to look again at the corridor process it may want to make it more forward looking. But in any event, we need to make FERC's promise in Order 890 more real. We need to have real regional transmission planning that moves this process ahead in a very cooperative and open fashion.

The CHAIRMAN. Ok. Ms. Tomasky, let me ask you about your backbone system here. Could you just explain how you came up with this proposed backbone system?

You say you did this jointly with the Wind Power Association or Wind Energy Association. Is that a large enough universe of folks to be making these kinds of plans in a way that would get us to a good result or should there be a lot of other folks involved as well?

Ms. TOMASKY. When we sat down with the Wind Energy Association it really was to see if we could conceive of sort of the beginning of an answer to that question. Which is can you actually conceive of a system that would permit us to move vast quantities of wind from the place where mostly the wind blows to where the load centers are.

We thought it was important to take the resource map of where wind is that we had developed and try to overlay that with what a transmission system would look like. That's really what that map is. You are absolutely correct to say that's not a plan.

A plan happens when the regional transmission organization, the States, neighboring utilities and others critical to the process actually start taking this concept and imagining how it's going to look and what you're going to connect, in what order, to build transmission. To put that in practical terms, in the Southwest Power Pool, we have engaged in joint ventures with two other utilities to try to put together specific proposals to build pieces of this. It

brings us in front of planning organizations. It raises issues about cost allocation.

In the absence of a centralized way to look at that, that's the right way to go about it. So no, you can't make it happen by yourself. But you can generate the ideas.

The CHAIRMAN. Thank you very much.

Senator Bunning.

Senator BUNNING. Thank you.

Mr. Whitley.

Mr. WHITLEY. Yes.

Senator BUNNING. Thank you. In your testimony you describe the need for an increase in the use of renewable fuels. I agree with you.

The difficulty with many renewable technologies is that they are not ready for large production. In other words, we can't produce an awful lot of power from renewable fuels presently. It often leads to an overinvestment in certain technologies while overlooking timely benefits from current technologies.

With clean coal technologies proven to be production ready and environmentally responsible, clean coal. Do you agree that it's only logical to use these same aggressive incentives for its emergence that are used for renewable energy investments?

Mr. WHITLEY. I testified quite a bit on the use of incentives. APPA's concern on incentives is that they be used appropriately. I'm not sure that we have a position on the use of incentives for renewables at this point.

But we are opposed to using incentives as a kind of a smorgasbord way of trying to get things done.

Senator BUNNING [presiding]. Ok.

Mrs. Tomasky.

Ms. TOMASKY. Yes, sir.

Senator BUNNING. Thank you. Who paid for your transmission lines since you are an investor owned utility?

Ms. TOMASKY. The transmission lines that we have, most of which were built in the 1950s, 1960s and 1970s, were paid through the regulated system that we have. Our shareholders made the investment and our State commissions gave us a reasonable return on that investment. Ultimately was paid by ratepayers.

Senator BUNNING. Ratepayers.

Ms. TOMASKY. Yes, sir.

Senator BUNNING. Ratepayers were the ones and not your investors?

Ms. TOMASKY. Our investors fronted the capital and we receive a return on that investment.

Senator BUNNING. So was built into your rate system?

Ms. TOMASKY. Yes, sir.

Senator BUNNING. Could you answer me the question of how much of your electricity is produced by coal?

Ms. TOMASKY. AEP across its system produces a little less than, about 65 percent of our electricity comes from coal today.

Senator BUNNING. Sixty-five percent. Mr. Boston, I have a question also for you. In the regional transmission authorities or RTOs, who pays for the new transmission lines that you need?

Mr. BOSTON. The new transmission lines are approved by our independent board of directors and then investors, including public

power entities that desire to build new transmission, investor owned utilities make the initial investment and——

Senator BUNNING. The ratepayers——

Mr. BOSTON. The ratepayer returns on that investment and ultimately pays for the investment in that transmission.

Senator BUNNING. Do you, can you give me a mix of how much of your power is produced presently by coal?

Mr. BOSTON. I cannot give you an exact mix, but I can say that coal——

Senator BUNNING. Approximately.

Mr. BOSTON. Coal is on the margin in our system last year 70 percent of the times.

Senator BUNNING. On the margin 70 percent.

Mr. BOSTON. It set the marginal price.

Senator BUNNING. How do we—the question I have it's reasonable, I think, is how do we with wind and solar from where we produce it since our technologies are not good enough right now to store it? How do we get it from where we can produce online to where it's needed? That's, I know we can build transmission lines to the source.

But what's the other alternatives? Anybody.

Ms. TOMASKY. Senator it's exactly the right question to be asking about renewables. Renewables are intermittent and one of the reasons that we proposed the network is because we think the solution for renewables is to integrate them into a larger system. Base load capacity does provide the underlying foundation to run the system.

Solar is available when it's available. Wind is available when it's available. You can by having a network that integrates all the resources in the most efficient way possible bring renewables in.

I do agree with you. If you simply try to do extension cords from a renewable source to a load——

Senator BUNNING. That's not the answer.

Ms. TOMASKY. That's not the answer.

Senator BUNNING. If we had something like we had with our pipelines, you can tap in and put it into the pipeline. Get it to the main source of need. But with renewables where they're at and how they're produced, we can't do that with transmission lines.

Ms. TOMASKY. That's right. I mean the network system, again if you think about a highway. We think about a lot of on and off ramps. The system we build, if we build something like this is going to be expensive. You want it to last for a long time.

Renewables can be developed over time. New load will certainly grow over time. If you have the basic overlay of the system, you can connect and operate a very flexible system. So that you can bring those resources on when they're available and deal with new load as it comes on.

Senator BUNNING. As we want to plug in that car, we've got to have the ability to produce the power where it's needed.

Mr. BOSTON. Let me add to that just a little. The Eastern Interconnection of the United States is the world's largest machine if you think from Ontario to Key West all the machines are turning in synchronous. We don't need dedicated facilities. We need an integrated grid with integrated resources.

As you have pointed out wind and solar will be intermittent. The storage that I see that has the most promise because it has other benefits to society is the plug in hybrid vehicle. The integration of wind, all peat nuclear, coal all come together to help us build that technology.

Senator BUNNING. But will that technology? We have to have technology with batteries that would really have to improved a great deal.

Mr. BOSTON. Technology is moving very quickly.

Senator BUNNING. Thank you very much, Mr. Chairman.

The CHAIRMAN [presiding]. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. Thank you to all of the folks who have given their time here. Appreciate it. Interesting testimony.

Interesting to learn that since the year 2000 we've only added about 900 miles of interstate transmission lines. You think about the energy consumption in this Nation. Boy, 900 miles to me, doesn't seem like much. But I'm used to big open spaces up north.

But, Mr. Whitley, you mentioned the comment that if you love renewables you can't hate transmission or something to that effect, as I recall. Would you all agree with that?

Mr. Loehr, you were probably the odd man out on that. Can you speak a little bit more about that connection there?

Mr. LOEHR. Thank you, Senator. I was trying to get my hand up and I guess Senator Bunning didn't notice me. There's two points I'd like to make about renewables.

No. 1 is renewables have two problems. One is that the wind usually blows best way far away from where the load is. The other thing is, in wind in particular, which is of course, very much a subject of attention right now.

Wind of its nature is only, only has a probability of being available at the time of the system peak of around 8 or 10 percent. Whereas thermal generation it's more like 90 percent. So it provides a lot of great energy.

It's a great idea. The fuel cost is zero. The environmental effect in terms of the atmosphere is zero.

But it's not there. You really can't count on too much of being there at the time of system peak. That's a question. Now there's two questions here. One is providing enough energy. The other is meeting the system peak.

The other thing is, as Mr. Boston so well stated, we have to integrate these resources into a grid. Unlike pipelines, and one of the problems I've encountered in discussing these issues with people is that a lot of people come from the pipeline industry. They think in terms of well, you turn the valves and you make the gas or the oil flow that way.

It doesn't work that way with electricity. You could rather—maybe a better way is thinking if the whole grid is vibrating and the generators wherever they are make the grid vibrate more strongly the load that the customers take off makes it vibrate less. You don't really have a line that connects a generator to a customer or even a couple of generators to a couple of customers. It has to be an integrated grid solution.

That's why I say, I think, you know, I'm not against transmission. I've worked in transmission all my life. It's just that I wanted to do this—I want to see us go forward as a Nation on a comprehensive basis in evaluating our electrical energy needs and consider transmission in connection with whether it's going to be coal fired generation or renewable generation, nuclear, demand side management. All those things need to be considered. They all need to be considered together, not independently.

Senator MURKOWSKI. It's tough. You know, once you've got your regional network built. You know, you think about how we built the interstate highway system.

We didn't say, ok, here's the plan from Maine to California. It kind of built over a period of years. As much as we'd like to have that one comprehensive, this is it plan, sometimes we recognize that it gets built. Sometimes it gets built more effectively than others.

Mr. Whitley, my last question this afternoon. You had mentioned the incentives for transmissions a couple different times. You said, you've got no objection to them as long as they're appropriate.

But you seem to suggest that these transmission rate incentives are the new normal, if you will. Can you explain just a little bit more where you're going with that?

Mr. WHITLEY. Sure, I'd be happy to. The point I was trying to make was that FERC did issue a rule setting, incentive base rate treatments for transmission, but in doing so, as I said it offered that smorgasbord. The thing that we think is missing there is the fact that the Federal Power Act also said the incentives, that the rates had to proven to be just and reasonable. I don't think that's happening in all the cases.

Senator MURKOWSKI. You're just saying they're set out there. You choose from them.

Mr. WHITLEY. We're saying transmission owners, trying to take advantage of it for every project. We had one transmission owner in the Southwest Power Pool actually apply to ask for the ability to apply the incentives to projects that they'd already constructed, after the fact. So that's why it's become a smorgasbord. When that happens it just slows down the whole process because entities like the Kansas Power Pool then oppose what they're doing at FERC. It just takes time for everything to happen. So—

Senator MURKOWSKI. Ok. Appreciate that. Thank you, Mr. Chairman. Thank you again for your testimony.

The CHAIRMAN. Thank you all for your testimony. I think it's been a useful hearing. All of this testimony is useful to us in trying to understand what additional action we should try to take here in Congress.

So thank you all very much, and we will adjourn the hearing.
[Whereupon, at 12:20 p.m. the hearing was adjourned.]

APPENDIXES

APPENDIX I

Responses to Additional Questions

RESPONSES OF TERRY BOSTON TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. You argue that we need to strengthen the transmission system. Do you believe that the NIETC, accompanied by a FERC backstop siting authority is sufficient to get that job done?

Answer. At the outset, PJM wishes to underscore that it is committed to working with the states within its footprint to ensure that state siting concerns and issues are proactively addressed. PJM is heartened by the recent approval by the West Virginia PSC as well as a favorable ruling by a Virginia Corporation Commission Administrative Law Judge concerning the “Trail” line which will address local as well as regional reliability needs in the PJM footprint. PJM believes that as an initial matter, these issues are best addressed at the state level consistent with the statutory scheme established by the Congress in the Energy Policy Act of 2005. It is too soon to say whether the statutory scheme set forth in EPACT 2005 can work successfully to appropriately balance local, regional and national interests going forward, particularly as the pressure for new transmission to support renewable energy, as well as the overall demand for electricity, continues to grow. PJM feels it best that the Committee continue to monitor the agencies’ implementation of the law and the time required to use the NIETC through future hearings. In addition, PJM pledges to report to the Committee on the results of its efforts and those of its transmission owners to implement the independent PJM regional transmission plan.

Question 2. Describe PJM’s cost allocation methodology. Does this adequately encourage construction of transmission in your region?

Answer. The methodology for allocating costs of both new transmission projects as well as existing transmission investment has been extensively litigated before the Federal Energy Regulatory Commission. As a result of both that litigation and a number of settlements of outstanding issues, the cost allocation methodology used in the PJM footprint can be summarized as follows:

Existing Transmission Investment: Existing transmission is allocated based on a “license plate” methodology. Under this methodology, customers using the transmission system pay, through their wholesale and retail rates, a return on the embedded cost of the transmission system within the service territory of its local utility (i.e. the “zone” in which that load is located). In return for that payment, customers in that zone are entitled to utilize the entire transmission system without respect to the source or location of generation. License plate rates, among other things, ensure that customers can purchase from a wide variety of resources throughout the footprint irrespective of the location of that generation.

New Transmission Investment: As a result of the Commission’s Opinion No. 494 in Docket No. EL05-121, investment in new transmission facilities of 500kV and greater are socialized among the PJM footprint. The Commission’s rationale for such a resolution included its determination that all users of the grid benefit from a strong “backbone” transmission grid at these voltage levels and that attempting to parse benefits for the 500kV and above grid would prove extremely contentious and judgmental. For new facilities below 500kV, the PJM market participants have filed a settlement which awaits the Commission’s approval. This settlement authorizes the allocation of such facilities based on a “DFAX” methodology which measures the incremental power flows giving rise

to the need for construction of the new facility and assigns costs accordingly to the loads causing the line to exceed its ratings absent new construction.

Cost allocation determinations are, by definition, ones which involve the exercise of judgment. The Courts have long described the allocation of costs leading to the design of rates as “an art not a science” and have provided deference to the regulator given the inherently judgmental nature of the exercise. PJM believes that continual litigation and uncertainty concerning cost allocation can be the greatest impediment to the construction of new transmission. For this reason, PJM did not propose a specific methodology to FERC in Docket No. EL05-121 but did underscore the need for regulatory certainty in this area. To the extent that cost allocation methodologies differ radically among regions, and particularly in states which are served by more than one Regional Transmission Organization, the potential for litigation and continual challenge to cost allocation is even greater. Moreover, the patchwork of different allocation methodologies across the country results in certain unintended consequences. Specifically, the variety of methodologies (beneficiary pays, socialization, license plate rates etc.) leads to and fairness issues. In addition, the lack of uniformity fails to capture and appropriately compensate for the impact of power flows across regional planning boundaries.

PJM has attempted to bring its states together to negotiate a resolution of the cost allocation methodology and is committed to continuing those efforts. However, at the end of the day, certainty from the regulator in this area is needed. The FERC’s determinations in Order No. 494 and the settlement reached by the parties in Docket No. EL05-121, although still controversial, did assist in providing a degree of certainty which can only be beneficial to the effort to attract investment in needed new transmission in the PJM footprint. PJM stands ready to work with its state commissions and members to explore whether there are other less contentious means to resolve these cost allocation issues.

Question 3. You say that you are modeling the impact of various climate change proposals on power flows and reliability and offer to share the outcome of that exercise with the Committee. We would be happy to see the results.

Answer. PJM is working on this modeling and expects to have results to share with the Committee in the fall.

RESPONSES OF TERRY BOSTON TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. There remains a great deal of confusion and misinformation concerning the effect of a national interest electric corridor designation. PJM believes that the Committee’s oversight hearing was helpful to “clear the air” concerning issues as to what the designation actually does vs. what it does not do. As PJM understands the law, DOE is to review whether congestion on the bulk power grid in given areas rises to the level of implicating certain national interest concerns including, as enumerated in the law, national interest concerns in energy security, reliability and economic choices for consumers. DOE’s designation essentially identifies whether congestion in certain areas of the grid triggers these national interest concerns. The designation does not pre-ordain solutions to that congestion, rather, the designation essentially highlights the problem and “screens” congestion throughout the grid to determine which areas of congestion may implicate the national interest concerns enumerated in the law. Specific solutions are then proposed by market participants; these solutions can include demand response, generation or transmission solutions. The state siting process (and FERC backstop siting) is only triggered for transmission solutions and, in the case of FERC backstop siting, only if (1) the state has no jurisdiction to site; (2) has failed to site within one year of an application to do so; or (3) has imposed unreasonable terms and conditions on the siting of a transmission line. Thus, state siting authority is not usurped per se by the designation of a corridor. Because the statute refers to “geographic” corridors, the designation does ultimately establish the boundaries of FERC’s authority to site a line on a backstop basis if any of the conditions set forth above are triggered.

A corridor designation does not adversely affect historic, cultural, scenic or natural resources. A review of the impacts of a given transmission line on historic, cultural, scenic and natural resources always has been, both at the state and federal level, a key component of the siting process. That process is unchanged as a result of corridor designation.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. PJM is studying this question and will shortly have additional information to share with the Committee concerning the short term impacts of potential climate change legislation on power flows on the grid within the PJM region. In the interim, PJM notes that depending on the particular timeline and level of compliance ordered, there could be impacts which will require changes to grid configuration. In the PJM region, fossil fuel remains the dominant fuel on the margins in over 65% of the total hours of the year. Although under a cap and trade system, allowance prices would, in the short run, have to be quite steep in order to displace coal with other sources of generation. CO₂ allowance prices will impact generation dispatch consistent with security constrained economic dispatch. This in turn can affect power flows, which today are predominantly from the west to the east in PJM, and begin to affect the degree of congestion in certain areas, potentially increasing congestion in some areas and decreasing it in others. The planning process has already begun to analyze the impacts of various climate change scenarios however without greater certainty as to the regulatory structure and compliance requirements, it is difficult to predict the absolute effect on the grid with any degree of certainty.

PJM does believe that development of the “Smart Grid” as envisioned in the Energy Independence and Security Act of 2007 can, when coupled with plug-in hybrid storage automobiles and advances in battery storage, play a significant role in affecting the grid of the 21st century. Advances in these areas can allow for the more efficient dispatch of generation and the development of an array of back-up sources to accommodate the intermittent nature of various renewable resources, including wind and solar. For these reasons, PJM has partnered with the University of Delaware and PHI on development of a prototype which allows for vehicles to provide regulation service for the grid.

Question 3. Do you agree that if you “love renewables” you cannot “hate transmission”?

Answer. Yes. As PJM CEO Terry Boston testified in his pre-filed testimony, more transmission is needed to meet the growing demand for renewable resources. Whether one supports more nuclear power, clean coal generation or renewable resources, more transmission is needed to bring those resources to customers. By their very nature, wind resources need to be located in areas such as along mountain ridges, where the wind is both predictable and relatively steady. These areas are often distant from load centers. Moreover, wind resources are often dispersed with many wind turbines clustered in wind farms. Transmission is needed to interconnect these resources to the grid and ensure the delivery of generation from them to the load. High voltage lines are needed given these long distances in order to avoid line overloads and significant line losses and to ensure adequate support to link this distant generation to market. As a result, this is not an “either/or” situation . . . transmission is needed and its important role should be recognized and facilitated by proponents of renewable resources as well as by the public at large.

Question 4. You testified that you have more than 40,000 MW of wind generation currently in the PJM queue. How are you able to handle grid reliability given the intermittent nature of wind resources? How can you ensure that a sudden drop in wind power won't lead to a grid emergency like what happened in Texas earlier this year?

Answer. Given the size and diversity of the PJM footprint as well as the limited number of prime sites for wind resources within the PJM footprint, PJM should not experience the type of grid emergencies such as occurred in Texas. Because PJM is the largest centrally dispatched grid in the world, it is uniquely situated to deal with intermittent resources. The scale and diversity of the PJM generation allows the system to more readily absorb changes in wind power generation without needing to invoke emergency measures. PJM geography is also quite diverse, spanning an area from the Atlantic Ocean to the plains of the Midwest. This allows wind generation in the Midwest plains to be offset by wind generation in the Allegheny Mountains or off-shore in the Atlantic Ocean. Weather, particularly dramatic changes in wind, is usually a local event and having the wind generation spread out across the entire footprint significantly helps deal with the intermittent nature of wind. PJM's geography also does not lend itself to large pockets (in relationship to its size) of wind generation. While the ability of PJM to absorb wind generation is not limitless, it is in a better situation than most.

Question 5. You noted that since 2000, the PJM Board has approved almost \$10 billion in new transmission investment. Have any of these projects actually been built yet?

Answer. Approximately \$2.3 billion of new transmission approved in the Regional Transmission Plan has been built and placed into service. This includes \$1.3 billion in baseline upgrades, \$641 million in transmission owner identified upgrades and approximately \$375 million in upgrades associated with interconnection of new generation as well as merchant transmission projects.

Question 6. Please describe PJM's efforts on demand response and energy efficiency to help meet increasing growth.

Answer. PJM and its stakeholders have focused extensively over the past several years to fully integrate demand response into the PJM wholesale electricity marketplace. The PJM market provides opportunities for demand resources to realize value for demand reductions in the Energy, Capacity, Synchronized Reserve, and Regulation markets. FERC authorized PJM to provide these opportunities as permanent features of these markets (as opposed to the earlier interim programs that had been in effect for some time) in early 2006. PJM completed the systems modifications required to enhance or implement these opportunities on June 1, 2006. This effort integrates demand response into the PJM wholesale market and provides symmetrical treatment for generation and demand resources. The following graphic, Figure 1,* illustrates the evolution of opportunities for demand response compared to generation resources in the PJM wholesale market. As illustrated in this figure, demand response has evolved over the past several years to provide opportunities for this service in the PJM market that are comparable to the revenue opportunities for generation resources. The successful incorporation of demand response has provided benefits to PJM customers by moderating prices and providing additional alternatives to consumption patterns.

ENERGY MARKET

PJM Economic Load Response enables Demand Resources to voluntarily respond to PJM LMP prices by reducing consumption and receiving a payment for the reduction. The Day-Ahead alternative provides a mechanism by which any qualified market participant may offer Demand Resources the opportunity to reduce the load they draw from the PJM system in advance of real-time operations and receive payments based on day-ahead LMP for the reductions. The real-time alternative provides a mechanism by which any qualified market participant may offer Demand Resources the opportunity to commit to a reduction of their electric demand and receive payments based on LMP for the reductions. Economic Load Response provides direct access to the wholesale market to end-use customers through agent PJM members, Curtailment Service Providers (CSPs), to curtail consumption when PJM Locational Marginal Prices (LMPs) reach a level where it makes economic sense. Currently, Economic Load Response includes incentive payments designed to encourage demand reductions.

The growth of participation by end-use customers since 2002 is significant. The graphic in figure 2 shows the increase in total MWh of demand response provided through CSPs from year to year.

CAPACITY MARKET

With the implementation of the forward capacity market, the Reliability Pricing Model (RPM), demand customers can offer demand response as a forward capacity resource. Under this model, demand response providers can submit offers to provide a demand reduction as a capacity resource into the forward RPM auctions. This is an important development for demand response providers because it provides the opportunity for them to obtain a commitment for a forward revenue stream up to four years in advance. Thus, the RPM provides a forward guarantee for a revenue stream which will enhance the business and investment model for further development of demand response. This feature of RPM is not only beneficial to the demand response providers that clear in the auction, it also provides additional depth and efficiency to the forward auctions because the planned demand response can compete directly with planned and existing generation resources which should lower capacity prices over time. In the first five annual RPM auctions which were held over the past year, over 2000 MW of new demand response was offered.

PJM is currently working with stakeholders to allow energy efficiency devices and processes to participate the capacity market auction. PJM expects to add this capability by the first quarter of 2009 in time for the next RPM auction.

* Figures 1-4 have been retained in committee files.

SYNCHRONIZED RESERVE MARKET

The PJM synchronized reserve market provides PJM participants with a market-based system for purchase and sale of the synchronized reserve ancillary service. Synchronized reserve is a quick-response service that is deployed by PJM when necessary to maintain reliable grid operation consistent with NERC control performance standards. In May 2006, PJM implemented changes to the reliability procedures and to the market rules to allow demand response to qualify as synchronized reserve. The synchronized reserve market provides a unique opportunity for competitive development and investment in demand response infrastructure. The payments to resources that clear in the synchronized reserve market are compensation for the resource to be available to respond within ten minutes. Therefore, while demand response resources must install infrastructure to allow them to curtail their consumption of electricity within ten minutes, they will only be requested to curtail when system conditions require the ten minute response. Since the PJM market operators have historically requested ten minute response, on average, once every six days, the demand response customer may provide the service with limited disruption to their business processes. Since the implementation of this market enhancement in June 2006, several PJM industrial customers have responded to the market incentive and have installed the infrastructure necessary to participate in the market. The volume of demand response participation in the synchronized reserve market is illustrated in figure 3. End-use sites that have qualified to provide synchronized reserve include not only large industrials but also colleges and a hospital complex.

DEMAND RESPONSE BENEFITS DURING PEAK PERIODS

Demand Resources demonstrated value during the heat waves experienced during summer 2006 and 2007. Demand reductions at time of peak electricity can significantly reduce wholesale power prices at times of peak usage. In addition, demand reductions displace fossil fuel consumption as illustrated below. PJM performed analysis to determine which generation would have been deployed in the real-time dispatch had the measured demand response not been present during the heat wave from July 31, 2006 through August 4, 2006. The analysis method was based on utilizing the PJM dispatch software, in offline mode, to determine which generating units would have been dispatched to meet the increased hourly demand requirement that would have existed had the actual demand response not been present in each hour. The fuel displacement was then calculated by determining the fuel consumption that each incrementally dispatched generator would have consumed based on the generator's characteristics and on the incrementally dispatched MWh for the generator from the offline simulation. Figure 4 illustrates the results of this analysis and it illustrates the fossil fuels displaced by demand response during the August heat wave.

ONGOING DEMAND RESPONSE DEVELOPMENT

The Mid-Atlantic Distributed Resource Initiative ("MADRI") began a regional effort to bridge the retail and wholesale aspects of demand response in June 2004. Sponsored by the Philadelphia office of the U.S. Department of Energy ("DOE") and led by a steering committee composed of representatives of DOE, the regulatory commissions of New Jersey, Pennsylvania, Maryland, Delaware, and the District of Columbia, the U.S. Environmental Protection Agency and PJM, MADRI identified several needs of and barriers to greater deployment of demand resources in the MADRI region. These barriers included: need for tools to measure the value of region wide demand response, financial disincentives for electric distribution companies ("EDCs") to strongly support demand response, lack of regional interconnection standards for distributed generation ("DG"), need for cost effective and timely access to end-use customer hourly usage data, and need to measure effectiveness of new demand response ("DR") technologies and advanced metering infrastructure ("AMI")

MADRI published a study, "Quantifying Demand Response Benefits in PJM," in early 2007 that documented annual energy savings from a 3% demand reduction in the highest priced hours of the year. MADRI has also produced model DG interconnection standards, a model tariff for decoupling EDC throughput and revenue and a web-based AMI tool box. MADRI has a 3% regional demand response goal under consideration.

The work of MADRI supports state regulatory DR efforts underway in Pennsylvania, New Jersey, and Maryland. Several state regulatory commissions in the PJM region are recognizing the critical role of AMI and new DR technologies to the bill management and consumption decisions of end-use customers. PJM is also, both

independently and as a member of the Demand Response Coordinating Committee (DRCC), participating in the efforts of NERC and NAESB to develop better tools to measure the impact of demand response on a national level.

In order to support our work through MADRI, PJM held a symposium on demand response in May, 2007 that was attended by a broad mix of stakeholders and subject matter experts.¹ One of the most prominent themes to emerge from the symposium was the need for coordination between retail and wholesale markets in order to increase demand response participation in PJM's markets. The participants at the PJM Symposium on Demand Response identified nine "top priority opportunities." These are shown in Table 1 below.

Table 1. Priority Opportunities from the PJM Symposium on Demand Response

1	A regional approach to the development of standardized platforms, communication protocols, investments in enabling technologies, and wholesale-retail DR integration issues
2	New retail rate structures that better reflect wholesale market pricing strategies
3	Pricing that captures the full value of DR and mechanisms for customers and service providers to get access to all relevant revenue streams
4	Direct load control for all residences, perhaps through state legislation, and modification of building codes for new residences so that they include specifications for technologies that accept/address dynamic pricing signals
5	Advanced metering infrastructure (AMI) available to all customers who want it and price responsiveness with little or no manual intervention
6	Exposure for all customers to hourly wholesale prices
7	Establishment of quantitative (MW) regional goals for DR
8	Adjustment of the 25% cap that currently exists in PJM's synchronous reserves DR program
9	Full responsibility taken by PJM for metered data and calculations used in determining customer baseline loads (CBL)

The symposium participants also emphasized the need to properly allocate responsibility for addressing some of these opportunities. In essence, some are areas in which the retail market should take a leading role, some are areas in which the wholesale market must take the leading role and others required a joint retail/wholesale commitment. Following the symposium, PJM worked with stakeholders to develop a multi-year Demand Response roadmap. The roadmap represents almost a full year of work with stakeholders in identifying remaining impediments and how both wholesale and retail solutions must be linked together to overcome many of these obstacles. Both MADRI and the PJM Board have endorsed the Demand Response Roadmap and the work has been continued through a second symposium, on the Demand Response Roadmap action items, held in May 2008. The Demand Response roadmap is continuing to be used as a guide for addressing barriers to demand response growth. The roadmap is available on the PJM website.²

RESPONSES OF COLIN WHITLEY TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. You argue that locational marginal pricing does not provide proper price signals to get new transmission built to relieve congestion. If you were able to build to relieve congestion yourself, resulting in joint ownership of transmission systems, would LMP improve as a price signal?

Answer. As I stated in my testimony, there is no real disagreement that the use of LMP reveals the existence of transmission congestion. The problem is that LMP is not effective as a price signal, because it generally does not lead in turn to substantial new investment in transmission facilities. This is the case for the reasons I described in my testimony (for example, building new transmission facilities can decrease the profits of generation owners—who are often also the dominant trans-

¹ Information regarding the PJM Symposium on Demand Response, including a link to the conference proceedings, is available on PJM's Web site at <http://www.pjm.com/committees/stakeholders/drs/drs.html>.

² <http://www.pjm.com/committees/working-groups/dsrwg/postings/demand-response-roadmap.pdf>

mission provider—located in the congested area). Therefore, we do not need to improve the price signal, but rather to improve the transmission planning and construction processes that would overcome the shortcomings of RTOs' Day Two market regimes. One way to improve these processes is through the use of the joint transmission ownership model. Joint ownership is already used successfully in the transmission planning and construction processes in some regions; its broader use in other regions could be very helpful.

In a report commissioned by APPA and released in February 2007, Synapse Energy Economics delved more deeply into, among other issues, the adequacy of LMP as a price signal for generation, transmission and generation. (LMP Electricity Markets: Market Operations, Market Power, and Value for Consumers prepared by Ezra Hausman, Robert Fagan, David White, Kenji Takahashi, and Alice Napoleon, Synapse Energy Economics. This report is attached.)

Synapse reached the following conclusions regarding LMP and why it has not acted as an effective incentive for transmission construction and expansion:

- No merchant transmission has emerged.
- Many other factors besides pricing differentials play a role in determining to build transmission, such as access to land, and the prospect of local opposition.
- Short-term price signals are not adequate to support projects that are capital intensive and require long-term financing.
- Price signals provided by LMP can change as fuel costs change. Because the prices are based on bids, not actual costs, the resulting signals can be especially volatile as generator offers change.

Question 2. Does discrimination in the provision of transmission service still exist? Is it better or worse in RTO regions?

Answer. The implementation of Open Access Transmission Tariffs (OATTs) as required in the Federal Energy Regulatory Commission's (FERC) Order No. 888 fundamentally changed the provision of interstate transmission service by public utilities as defined under the Federal Power Act (i.e., investor-owned utilities). The most overt forms of discrimination were greatly reduced by Order No. 888's requirement that transmission-owning utilities file OATTs with standardized terms and conditions. There remain, however, numerous opportunities for transmission owners to discriminate in more subtle ways.

In the non-RTO regions, there is considerable variation in the extent to which OATT service actually provides a viable platform for competition. The variation is partly attributable to differing "on the ground" conditions, but it also is driven by whether the dominant utilities (which, in non-RTO regions, tend to be vertically integrated) favor or oppose the development of more competitive energy markets. Utilities that oppose greater competition have been ingenious in finding ways to discriminate in the provision of transmission service, even under the standardized terms of the OATT. For example, a crucial factor is how much transmission capacity a transmission owner decides is "available" to support requested OATT service. Through the various ways they can influence that calculation, transmission owners are able to make more or less service available to their competitors and other transmission customers. FERC in its Order No. 890 has taken this issue on, and the industry, through the North American Electric Reliability Corporation, is currently working on revising and standardizing methods of calculating such Available Transfer Capability (ATC).

Although instances of discrimination still occur, APPA informs me that, overall, it receives fewer complaints from members regarding the provision of transmission service in non-RTO regions than it does from members in RTO regions. There is, however, one notable exception: APPA members taking transmission service from Entergy Corporation affiliates report systemic and continuing problems obtaining transmission service. These problems can be traced to Entergy's failure over many years to invest meaningfully in transmission upgrades on its very congested system. It is simply too soon to tell whether the OATT reforms ordered by FERC in its Order No. 890 series will result in Entergy's transmission customers receiving improved access to transmission on reasonable terms.

In RTO regions, complaints by APPA members regarding transmission service generally do not involve allegations of discrimination by the RTO; more often, they arise from excessively long delays in processing generator interconnections and other service requests, volatile and unpredictable charges for transmission service (due to congestion-based pricing), inadequate financial transmission rights to hedge congestion costs, and inordinately complex and costly market structures. The service provided to all RTO transmission customers is generally the same; the problem is that the RTO transmission service paradigm is far more advantageous to traders and merchant generators than to those entities whose primary focus is serving their

retail customers at the lowest cost. For example, public power systems generally hold (through ownership or contract) a portfolio of long-term power supply resources to meet their customers' needs. The financial rights-based transmission service that Day Two RTOs provide simply does not support public power systems' power supply portfolios or service obligations in the same way that the physical-rights transmission service provided under the Order No. 888 OATT did, especially where (as is all-too-often the case) the RTO's transmission grid is constrained.

In the RTO serving the State of Kansas (the Southwest Power Pool), transmission improvements and upgrades are automatically assigned to the existing incumbent Transmission Owners (TOs), under a "right of first refusal." Unfortunately, many of these TOs do not undertake the associated transmission facilities improvements in time to support the associated transmission service requests by third parties such as the Kansas Power Pool (KPP). They instead apply for transmission rate incentives for these transmission improvements and wait until they know if they will receive the incentives before venturing to build the facilities. (I should note, however, that transmission improvements required by these TOs to provide transmission service to serve their own native loads have been initiated and constructed.) Otherwise, they request the transmission customers in question to agree to taking the entire financial "risk" associated with constructing the facilities. If the customers (in our case, public power communities) are expected to take the full financial risk of such projects, I think they should also be able to enjoy the associated rewards (and lower the total financing cost of the project) through the vehicle of joint transmission ownership.

As I stated in my original testimony, transmission should be assigned and built based on an obligation to serve all loads in the RTOs' service area. I agree with Senator Bingaman that transmission is a highway. Everyone should be able to drive on it.

Question 3. What can the government do to encourage joint ownership of transmission systems?

Answer. APPA's resolution 06-11, adopted June 12, 2006, urges FERC to encourage and promote joint ownership of transmission in both RTO and non-RTO regions. It lays out five ways FERC can exercise its existing authorities under the Federal Power Act to promote joint transmission ownership by FERC-regulated public utilities and public power and other non-jurisdictional electric utilities: "(i) approve reasonable rate incentives for jurisdictional transmission services; (ii) impose conditions on public utility mergers; (iii) ensure that all sellers authorized to charge market-based rates have mitigated their generation and transmission market power; (iv) enforce the joint planning and credits for customer-owned transmission requirements in the FERC pro forma open-access transmission tariff; and (v) other authorities granted to the Commission under the Energy Policy Act of 2005, including, but not limited to, the designation and ownership of facilities within "national interest electric transmission corridors and initiatives to ensure that load-serving entities are fully able to meet their native load service obligations." The resolution also urges Congress and other federal agencies to consider joint ownership of transmission as a possibility when allocating federal resources to help enhance the bulk transmission system or to rebuild or upgrade transmission lines.

APPA has filed comments in several Commission rulemaking dockets suggesting just such measures to promote joint transmission ownership. For example, APPA filed extensive comments with FERC in the rulemaking that resulted in Order No. 890, which revised the landmark OATT first required in Order No. 888. APPA cited legal authorities that would support a tariff requirement that transmission owners offer joint ownership opportunities in developing transmission expansion plans. APPA also suggested that FERC make this a requirement in connection with the granting of market-based rate authority for dominant transmission providers, and in merger proceedings under FPA Section 203. In addition, APPA suggested that FERC make the grant of transmission rate incentives to a "public utility" (i.e. investor-owned utilities) transmission provider contingent upon that transmission provider offering joint ownership opportunities to its transmission customers. As APPA said in its comments in that docket: "Joint ownership can and does work, but in certain regions of the country, it will never be a reality unless the Commission does more than simply encourage it."

In Order No. 890, FERC said that it supported joint ownership, but declined to make any mandatory requirements for an "open season" or other mechanisms to allow opportunities for joint ownership. Excerpts from APPA's comments to FERC in the Order 890 docket are attached. Similarly, in other rulemaking dockets, FERC has noted that it supports the concept of joint transmission ownership, but has declined to take any concrete steps that would support that policy preference.

As I also mentioned in my written and oral testimony at the hearing, Congress can support joint ownership by providing additional relief from certain “private use” restrictions that limit public power’s ability to use tax-exempt financing for transmission lines.

RESPONSES OF COLIN WHITLEY TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. Under Section 216 of the Federal Power Act, which was established by Section 1221 of the Energy Policy Act of 2005, FERC siting authority is limited to electric transmission facilities in highly congested corridors designated by the Department of Energy (DOE). FERC can act only where states lack authority to act or have withheld approval of requested authority, which is why it has been called “backstop” authority. This section sets up a process under which: 1) DOE designates certain geographic areas where transmission is highly constrained or congested as NIETCs; 2) FERC can grant siting and construction permits employing federal eminent domain authority for transmission facilities in these NIETCs if, after a certain period passes, state authorities have withheld approval of such proposed transmission facilities, a state does not have the authority to approve the siting of such facilities or to consider the interstate benefits, or the applicant is a transmitting utility that does not serve end-use customers in the state where the project is proposed. FERC must take certain issues into consideration when using its backstop siting authority. It must find that the proposed facilities will: significantly reduce transmission congestion in interstate commerce; protect or benefit consumers; are consistent with the public interest; and enhance energy independence. The proposed construction or modification must also be consistent with sound national energy policy.

Therefore, a designation of an NIETC by DOE is just that—a designation. State siting authority can and likely will still be invoked and exercised; review of the environmental issues and associated historic, cultural, scenic and natural resources will no doubt take place in the state proceedings, and if necessary, the federal backstop proceeding at FERC. All appropriate environmental and land use issues will be aired when actual siting applications are made. It would be both duplicative and wasteful to consider these issues in depth at the corridor designation stage; duplicative because these issues would then have to be reconsidered in actual siting proceedings, and wasteful because no follow-on applications for transmission facilities may in fact be filed.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. Emissions of greenhouse gases (GHGs) and the linkage of these emissions to global climate change is the most significant environmental issue facing the electric utility industry, and one of the most pressing environmental issues confronting the nation. Addressing this issue in an appropriate manner is, therefore, one of the highest priorities of the APPA. In June of 2006, the APPA Board of Directors established a CEO-level Climate Change Task Force to help APPA evaluate and ultimately develop policy recommendations on legislative proposals to reduce GHG emissions and to provide practical advice to APPA members on programs and activities they can pursue locally to reduce GHG emissions in their own communities.

In 2007, APPA’s membership approved a resolution sponsored by the CEO Climate Change Task Force (Resolution 07-03) that expresses support for congressional action to reduce greenhouse gas emissions in order to address climate change and sets out a series of principles to guide congressional consideration of related proposals. The resolution asserts that any federal program to address climate change must:

- Be economy wide;
- Consider the financial impact on consumers;
- Protect the ability of U.S. industries to compete in world markets and must carefully consider the international competitive impact on U.S. jobs;
- Allow credit for early actions taken to reduce greenhouse gas emissions;
- Maintain reliability [emphasis added], protect national security and avoid over-reliance on any single fuel by recognizing the importance to the nation of preserving a diverse mix of electricity generation fuels, including coal, nuclear, natural gas, and all renewable energy sources including hydro;
- Place an enhanced and immediate economy-wide focus on energy efficiency for all energy uses;

- Ensure that tax-based or other incentives for the development and deployment of renewable and clean energy facilities and programs are provided on a comparable basis to all electric industry sectors including public power;
- Recognize and address regional differences that could impact the fairness and effectiveness of any program designed to address greenhouse gas emissions;
- Include additional and expanded federal support for research, development and deployment of cost-effective technologies to reduce, capture, transform, transport or sequester greenhouse gases from emission sources throughout the national economy; and
- Ensure that any generation portfolio requirements allow all low emission technologies.

Since the adoption of Resolution 07-03, the attention on climate change has continued to increase in Congress, with a sharpening focus on establishment of a cap-and-trade program as the general approach to addressing the issue. Therefore, APPA adopted additional guidance in June of this year in Resolution 08-10, Principles for a Potential Federal Cap-and-Trade Program to Reduce Greenhouse Gas Emissions (attached). However, the general principles established in 2007 still apply, and APPA continues to view any climate change proposals by Congress and the Administration with these principles in mind.

With regard to ensuring the maintenance of reliability, APPA submitted comments in July of this year to the North American Electric Reliability Corporation (NERC) on the potential impact of climate change on reliability. NERC had requested comments from the industry on this issue to assist it in carrying out its responsibilities to assess long-term adequacy and to examine policy issues that may affect the accuracy of its future adequacy assessments.

In its comments, APPA expressed concern about the convergence of the numerous issues raised by climate change that create pressures to pick certain technology options and discard others prematurely before their operational and cost consequences are fully understood. APPA also said that it anticipates increased physical, economic and supply pressures in the competition for (relatively) cleaner energy sources and for access to related infrastructure such as local water supplies, gas pipeline capacity and rail transportation, that are needed for electric generation.

APPA noted that these tensions could create increased risks to electric system supply adequacy and operational reliability in the following seven areas:

1. The Dash for Gas and International Energy Demand Pressures. The most immediate risk to reliability has been called the “dash for gas.” Public policy decisions and market forces will likely cause many companies to choose the “quick fix” of fuel switching. These market forces include pressure on company stock prices and bond prices if they do not mitigate carbon risk in anticipation of public policy decisions by “going green” now. The United States has adopted such coal/gas/coal/gas fuel switching policies several times before—and each such switch has had unintended consequences. The dash for gas in electric generation could create conflict with basic manufacturing industries that need reliable natural gas supplies as feed stocks and with widespread use of gas for space heating. Further, increased domestic reliance on imported liquefied natural gas (LNG) implies that U.S. natural gas demand will increasingly be driven by international oil and gas markets.

2. Replacement of Generation Retired Due to Climate Change. The second risk to reliability arises from the need to rapidly replace the base-load power supplied from generating capacity that is likely to be retired in the near future due to the combined effects of equipment age and regulatory requirements to reduce CO₂ emissions. Continued reliance on coal for power generation implies that the utility industry will need to install over 100 GW (gigawatts) of new capacity to replace existing conventional steam-electric capacity (with no additional capacity to meet forecasted demand growth).

3. Parasitic Losses from CO₂ Capture and Compression. The third reliability risk identified by APPA results from the enormous parasitic energy demands associated with CO₂ capture and compression. Research sponsored by APPA indicates that the nation will need to install as much as 320 GW of additional generating capacity to meet the parasitic losses associated with CO₂ capture and compression systems at existing coal-fired power plants. While the loss factors for some new technologies may be as low as 30%, the parasitic losses associated with retrofitting existing conventional coal-fired plants are as much as 50% of total gross output. By way of comparison, roughly 100 GW of capacity might be needed to meet the parasitic losses associated with SO₂ scrubbers and NO_x selective catalytic reduction systems under the Clean Air Interstate Rule

(CAIR), which was vacated by the United States Court of Appeals for the District of Columbia Circuit.

4. Generation Outages from Rapid Deployment of New CO₂ Control Technologies. The fourth risk to reliability associated with climate change is the move to CO₂ control technologies that have not been fully developed beyond small scale demonstration projects. Commercial scale projects will undoubtedly raise numerous logistical, technical and cost factors that are as yet not well understood. Until shown otherwise, it is unreasonable to assume that planned and forced outage frequencies and durations for new generation and carbon control technologies are in any way similar to the much lower outage rates for mature conventional generation technologies. Particularly for coal-fired generation in conjunction with CO₂ capture, compression and permanent storage, the critical skill sets and technology requirements to permit, build, own, operate and maintain such a facility are more similar to those required for a major chemical plant than a conventional steam-electric power station.

5. Non-Electric Infrastructure Required for Large-Scale Carbon Capture and Sequestration. All new technologies for controlling CO₂ for climate change purposes rely heavily upon new non-electric infrastructure that must be built in order to complete the process of safely injecting and storing CO₂ in geologic formations. An extensive network of new pipelines and rail for transportation of chemicals required for carbon capture, pressurization and storage will be required. Nearly all existing coal-fired plants and most new plants that intend to capture, pressurize and inject CO₂ into geologic formations will need to transport such pressurized CO₂ by pipeline to remote locations.

6. Heavy Reliance on Remote and Intermittent Renewable Energy Sources. Heavy increased reliance in many regions of the United States on renewable energy sources that are remote from load centers and/or intermittent or variable in their output characteristics may pose reliability risks. A major build-out of EHV transmission is required to ensure the deliverability of wind and other generation to major regional load centers. The alternative, which entails extremely heavy reliance on renewable generation in the sub-regions where it is produced, is likely to introduce new operational problems for the interconnected grid. System operators and renewable energy operators may be forced to curtail significant amounts of otherwise economic and environmentally beneficial generation in source regions.

7. Competition for Scarce Water Supplies. Population and economic growth in more arid regions of the United States, depletion of ground water supplies, and increased risk of drought due to climate change all increase the general scarcity of water. Further, new generation technologies may compound these factors, by significantly increasing the per MWh (megawatt-hour) water requirements for power generation. These factors increase the difficulties encountered in siting of new plants and meeting operating restrictions for existing plants. APPA has developed a series of white papers to address some of the technology, legal and public policy issues associated with carbon capture and storage. (These APPA white papers are attached.)

Question 3. APPA does not believe that RTOs have aided in infrastructure investment and that the Locational Marginal Pricing measures are not working. Please elaborate.

Answer. Please see our response to Chairman Bingaman's question number one above.

[Reports, resolutions, and white papers have been retained in committee files.]

ATTACHMENT.—EXCERPTS FROM APPA'S COMMENTS ON FERC'S PROPOSED REVISIONS TO THE OATT AND COMMENTS ON REHEARING IN THE FERC INCENTIVE RATES DOCKET

Longer term solutions require transmission expansion so that the transmission grid can support willing buyers and sellers who wish to make deals. The Commission should enforce the OATT requirement (§ 28.2 and Preamble to Part III), as ultimately modified in the pending OATT NOPR, that the transmission owner plan the system to accommodate a network customer's existing and planned designated network resources. However, the Commission in appropriate cases should also tie the grant of MBR authority to a vertically-integrated transmission owner's demonstrated commitment to make specific transmission upgrades that would allow its wholesale customers cost-effective access to competitive alternatives. Cf. Okl. Gas & Elec. Co., 108 F.E.R.C. ¶ 61,004 (construction of transmission "bridge" as remedy to market power concerns). It should tie the grant of MBR authority to the dem-

onstrated willingness of such vertically-integrated transmission owners to jointly plan and construct transmission with their network customers, to participate with them in collaborative, open regional transmission planning processes, and to permit such customers to invest in the transmission system on a comparable basis. Customer investments must be treated comparably to the transmission provider's own, through mechanisms such as transmission credits and recovery of costs through the transmission owner's revenue requirement.

In comments on the Notice of Proposed Rulemaking (NOPR) in this docket, APPA and NRECA suggested that the non-cost-based financial bonuses proposed in the NOPR were neither mandated by section 219 nor likely to promote transmission infrastructure investment consistent with the new statute. Such investment was not being limited by investor concerns about allowed equity returns or inadequate cash flows from monopoly transmission businesses. Rather, such investment could be better stimulated by requiring public utilities to engage in an open, regional transmission planning process that permits all load-serving entities—including public power—to participate on a comparable basis; by affording public-power entities the opportunity of joint ownership of new transmission facilities with public utilities; and by providing greater regulatory certainty and timeliness of cost recovery associated with major new transmission investment, thus reducing the associated risk to investors.

APPA and NRECA have argued that a reasonable precondition to eligibility for incentive rate treatment would be a demonstration by the public utility that it has offered joint ownership opportunities for transmission upgrades and new transmission facilities, including third-party participation in the construction of such facilities, to other load-serving entities in the region, including cooperatives and public-power entities, on reasonable terms and conditions.

There are many reasons why such a condition would make sense and would be consistent with Congress' objectives in section 219 and the Commission's objective in the Final Rule "to benefit consumers by providing real incentives to encourage new infrastructure, not simply increasing rates in a manner that has no correlation to encouraging new investment." Because of their access to different capital markets and different capital structure, cooperative and public-power participation in future transmission projects could help ensure that needed facilities get built at the lowest overall cost. Moreover, cooperative and public-power participation could well reduce the need for incentive rate treatments by jurisdictional public utilities, e.g., by providing needed cash flow or reducing financial uncertainties. Indeed, if open, regional transmission planning was employed as also recommended by APPA and NRECA, then such joint ownership and construction could well become the norm. Congress clearly contemplated encouragement by the Commission of ownership of transmission facilities by a broader universe of entities than just public utilities, as section 219(b)(1) charges the Commission to promote capital investment in transmission, "regardless of the ownership of the facilities."

Such a precondition would also comport with Congress' contemporaneous command in subsection 217(d)(4) of the FPA that the Commission "shall exercise its authority under the [FPA] in a manner that facilitates the planning and expansion of transmission facilities to meet the reasonable needs of load-serving entities to satisfy the service obligations of the load-serving entities"

Finally, for the reasons outlined in section B above, nothing in section 219 precludes such a reasonable precondition to the eligibility for incentive rate treatments. Indeed, such a precondition would further the express purposes of the Commission rule stated in section 219—encouraging transmission infrastructure investment "for the purpose of benefiting consumers," and "promoting capital investment in the enlargement, improvement, maintenance, and operation of all facilities for the transmission of electric energy in interstate commerce, regardless of the ownership of the facilities."

The Commission acknowledges that "public power participation can play an important role in the expansion of the transmission system" and affirms its desire "to encourage public power participation in new transmission projects." Indeed, the Commission correctly notes that "[e]ncouraging public power participation in such projects is consistent with the goals of section 219 by encouraging a deep pool of participants."

Nonetheless, the Final Rule declines to "require public power or other joint participation in a transmission project in order for investment in a project to be eligible for incentives," because "it is inappropriate to mandate a particular joint-structure be used in all cases." Similarly, while noting the "value" of a "consortium approach" built around an RTO planning process "that includes public power and other new entities for new investment," and reiterating that the Commission "encourage[s] participation by public power in meeting the transmission infrastructure provisions

of section 219,” the Final Rule does not “require a consortium approach.” The Final Rule concludes “it is more appropriate for applicants to fashion proposals for new transmission infrastructure projects that are tailored to the specific circumstances and needs of a particular project.”

The Final Rule’s explanations do not hold up to scrutiny. APPA and NRECA absolutely do not propose that the Commission require joint participation—in the sense of joint ownership—as a condition for investment in a project to be eligible for incentives. Neither do they propose that “a particular joint-structure be used in all cases.” Rather, they propose that public utilities be required to offer joint ownership opportunities for transmission upgrades and new transmission facilities, including third-party participation in the construction of such facilities, to other load-serving entities in the region, including cooperatives and public-power entities, on reasonable terms and conditions, as a condition to receiving incentives. Simply put, incentives should not be offered to public facilities for upgrades or facilities that could be built for less through the willing joint participation of load serving entities. The Final Rule acknowledges the many advantages from public power participation but fails to explain why it rejects any reasonable conditions on incentive rates that are designed to achieve the acknowledged benefits to consumers arising from public power participation in transmission infrastructure investment. The Final Rule’s treatment of this issue is arbitrary and capricious.

RESPONSE OF SUSAN TOMASKY TO QUESTION FROM SENATOR BINGAMAN

Question 1. Your vision of a national extra high voltage interstate transmission system is a dramatic one. How would the planning to coordinate development of such a system be carried out even if FERC had plenary siting authority?

Answer. Thank you for the opportunity to expand on my testimony to address transmission planning in conjunction with the need for plenary federal transmission siting authority.

We recognize that planning transmission facilities requires a coordinated effort with input from many parties, including state commissions, RTOs, reliability organizations, other affected utilities and landowners. While transmission siting generally is challenging, there is an added challenge when siting extra-high voltage (EHV) transmission lines since the lines typically cross multiple states and provide broader benefits than those where the line is being sited. This creates a significant impediment to the timely construction of needed facilities. Given these challenges, it is hard to imagine that we will break through the logjam of competing interests if we don’t have a federal forum at the FERC. Its purpose: to resolve conflicts, with the express goal of ensuring that we can build the transmission we need to meet the nation’s long-term energy policy objectives. (pages 10-11 of Testimony)

To create this national transmission system, we need to overlay the existing grid, which was planned primarily to meet more local needs, with an extra-high voltage transmission system whose primary purpose is to integrate resources and load as efficiently as possible across large regions. That means that we need two things: first, we need a FERC siting process, akin to the Natural Gas Act certificate process that permits the siting of EHV transmission facilities on an expedited basis, and ultimately, we need a long term conceptual plan that identifies broad corridors for new EHV transmission development.

To accomplish this, Congress would set out the vision, giving FERC the tools and responsibility to implement it. FERC would be directed to promulgate rules for considering applications for new EHV transmission lines, which in the near term could be product of coordinated planning efforts by existing planning groups including RTOs and utilities. These organizations do a very good job in addressing the thermal and reliability needs of their individual planning areas and they need to play a critical role in future planning activities.

Ultimately, however, the national transmission system we have advocated will address national energy goals, and will therefore need to be based on a planning effort that takes into account the additional goals of ensuring efficient, environmentally sound electric power resource development across broad regions. We believe that the best way to coordinate planning of new EHV transmission is through a coordinated planning effort, overseen by FERC, taking all these reliability, efficiency and resource planning goals into account.

One way to do this would be to require FERC to establish two regional planning efforts, one for the western and one for the eastern interconnection, with the goal of creating, within 2 years, an overlay plan for new EHV transmission in each of these areas. These planning efforts would follow procedures that ensure broad participation, and would take advantage of leadership and expertise already developed

in RTOs, the states and other entities. The product would be a national transmission plan that would serve as a basis for future FERC siting decisions on specific projects. While FERC should not be precluded from using its authority for a wide range of proposals, projects that are consistent with the national transmission plan would be entitled to expedited consideration and would enjoy the benefit of a broad cost allocation and, where appropriate, incentive pricing.

We recognize that this is an ambitious and resource-intensive undertaking. But the integration of new, environmentally sound resources will require extensive transmission construction on an interconnection wide scale. The sooner we plan it and begin putting steel in the ground, the quicker we can realize the benefits of renewables and cleaner technologies, and get down the path to a lower carbon future.

RESPONSES OF SUSAN TOMASKY TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor (Corridor) designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. Under the Energy Policy Act of 2005, states retain their existing authority under state law to site transmission lines. The designation of a corridor by DOE is not a siting decision and does not in any way usurp state authority. By designating national interest corridors, DOE is only broadly identifying areas within which congestion issues should ultimately be addressed by the development of new transmission lines. Applicants are still subject, among other things, to requirements to follow RTO planning requirements and to environmental laws affecting protection of environmental, historic, cultural and scenic resources. DOE corridor designation also creates no right of eminent domain.

If states fail to site a line that addresses issues identified in a DOE corridor designation, an applicant can then go to FERC seeking federal authority to move forward with that necessary project. The FERC process would include opportunity for public input and FERC would be required to follow federal environmental requirements addressing all the resource issues described above as well as landowner and other concerns.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. The implications for our transmission grid will be profound. Today's transmission system is heavily dependent on the location of the current generation fleet and the generation fleet of the future—in a carbon-constrained world—is likely to be located much differently. Historically, transmission has been the solution of last resort. As a result, the current system is simply not robust or flexible enough to handle a substantial shift from our current generation fleet to one that is more diverse in both fuel source and location.

The choices we make about facilitating transmission will determine how quickly and efficiently we can bring lower carbon electricity to the nation's electric consumers. We need to think about "transmission systems" not transmission lines. AEP advocates the development of an extra high voltage transmission system, comparable to the interstate highway system that has fired the country's economic growth over the last 50 years. In particular, we see a significant technological advantage to developing higher voltage classes, including 765 kV technology. 765 kV transmission is the most efficient alternating current (AC) transmission voltage class in the country and is capable of transmitting large amounts of power over large distances. The higher the voltage, the more efficiently large amounts of power can be moved across large geographical areas. Given that there is a growing interest to harvest some of the wind rich areas of the country, an interstate transmission system will allow for the interconnection of large generation resources and transmit this energy in a highly efficient manner, while minimizing the amount of right of way.

In the end, we firmly believe that our nation must have an interstate EHV transmission system that effectively integrates significant new, cleaner resources to meet our national energy policy goals. As noted in my testimony, to the extent that our national interests are to press forward with the development of cleaner, more secure sources of power, then it is equally urgent that we build the transmission system that can deliver this power to customers.

Question 3. Do you agree that if you "love renewables" you cannot "hate transmission"?

Answer. Yes, definitely.

While some small installations of renewable power—agricultural wind turbines, solar panels on home roofs, etc.—do not require extra-high voltage transmission, we must have EHV to harvest large-scale renewable generation needed to actually re-

duce the nation's carbon emissions. A nationwide EHV overlay, as advocated by AEP, achieves two purposes in this arena. It facilitates the large-scale renewables, as previously stated. It also relieves congestion on the existing lower voltage grid, allowing those lines to more readily accommodate the smaller installations.

Many observers these days say "there is no silver bullet" to effectively deal with carbon emissions. That may very well be true. Certainly in our analysis, we see a variety of solutions needed to address our current and future challenges. Renewables, nuclear and clean coal generation should all play a role. Lower voltage AC lines and high voltage DC lines also will play a role. But beyond that, we do believe that the EHV overlay is the silver bullet: while it does not, in and of itself, solve all of our problems, none of our solutions can be implemented efficiently without it.

Question 4. In your testimony, you note that from 2000 to 2006, electric companies invested more than \$37.8 billion in transmission. Were these investments mainly for intrastate lines?

Answer. By intrastate lines, we assume the committee is referring to lines developed largely to meet more localized resources requirements, rather than more regional facilities that address needs on a multi-state or regional basis. In that context, the answer is yes, the majority of these investments were intrastate rather than interstate transmission.

According to a 2005 EEI report, NERC's Electric Supply and Demand Database shows that the average line length for the 470 projects in the database at the time (230 kV and above) was only 23 miles. This is clearly not characteristic of major interstate lines. In another 2005 EEI report, approximately 50 percent of 2003 total transmission capital expenditures was invested in transmission station construction (e.g. transformers), and the other 50 percent was spent on transmission line equipment. This means that of the \$37.8 billion investment, about half was spent on substation upgrades rather than actual transmission lines. The conclusion is that very little of the recent investment has been for true interstate transmission facilities, especially new lines. Today, new infrastructure is targeted to meet reliability needs only and is not focused on transmission expansion to secure development of a robust grid.

Question 5. Do you believe that FERC's ability to site interstate gas pipelines is an effective model for increased federal authority over the siting of electric transmission lines?

Answer. Yes. We agree with the testimony of Chairman Kelliher on this matter. The performance of an interstate transmission system is dependant on the availability of adequate infrastructure. While siting transmission is difficult in the best of circumstances, the challenges associated with EHV transmission are even greater. EHV transmission lines, by their nature, can be regional, interregional or national. Similar to interstate gas pipelines, the benefits associated with EHV lines are aligned with regional or national interests. State processes and state laws require the siting agency to evaluate the state need for the project, which becomes particularly challenging when we are asking a state to make a determination that requires them at times to weigh regional or national interests against state interests. In these situations, there is an inherent friction between state interests and regional/national interests. The challenge is compounded when an EHV line crosses state borders and both approvals are necessary to secure construction of the line. To ensure timely line construction, two or more states need to determine the need for and routing of the line. When each state is focused on its own individual interests and there is a need for coordination, inevitably there is a significant risk of delay.

Question 6. AEP and the American Wind Energy Association recently partnered on a study showing the scale of transmission projects necessary to move electricity from our nation's wind resources to major load centers. You estimate the cost would be about \$60 billion to permit wind to supply 20% of our nation's electricity needs by the year 2030. How many miles of interstate transmission lines would we need to move all this wind power?

Answer. The study performed by AEP estimates approximately 19,000 miles of extra-high voltage (765 kV) lines would be required for a true, robust interstate overlay grid to harvest and deliver 20% wind energy by 2030. This map illustrates one configuration which would secure AWEA's goal of supplying 20% of the nation's energy demand from wind resources. AEP developed this conceptual EHV overlay to respond to AWEA's request. The value of any robust EHV overlay is the ability to move power from large generation rich areas to the nation's load centers, as such, this is but one of many possible configurations that could work to satisfy the nation's long term energy needs. The actual mileage would be dependent on the technology used (i.e., using high capacity lines reduces the total mileage required), and the precise location of the generation. While done on a conceptual level, the configu-

ration (shown on the map below)* is a system that would link areas of high wind resource potential with major transmission hubs across the country. The 19,000 miles can be used as a rough guide to the order of magnitude required.

Question 7. Has AEP explored joint ownership arrangements with public power systems and rural electrical cooperatives in developing plans for new transmission lines?

Answer. AEP is committed to the vision of a national EHV interstate transmission system and is actively pursuing the build-out of parts of that system. We have pursued targeted ventures based on the location of the projects and the desire to work with utilities where these facilities would need to interconnect. To date, we have not pursued joint ventures with public power systems and rural electrical cooperatives, however as we continue to identify opportunities for new projects it is probable that AEP will reach out to these entities.

RESPONSES OF GEORGE C. LOEHR TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. Designation makes the designated area subject to “backstop” federal authority to site transmission, and confers on an applicant eminent domain authority. The scope of that authority is in dispute. Most agree that section 216 of the Federal Power Act (added by the Energy Policy Act of 2005) conferred on the Federal Energy Regulatory Commission (FERC) “backstop” siting and eminent domain authority in cases where the state or local entity does not have authority to site an interstate transmission line, or where that entity has not acted within one year of an application to site an interstate transmission line. For its part, FERC has interpreted section 216 more broadly to empower it to reverse state or local decisions that are timely made (i.e., within one year) to deny an application to site an interstate transmission line. Various state regulatory bodies and other interests have challenged this interpretation.

The National Interest Electric Transmission Corridor designations made by the DOE as a supplement to its 2006 Congestion Study do, in my opinion, usurp the authority of states in the siting of electric power transmission lines. Also, they could undercut the efforts of the Regional Reliability Councils to coordinate the plans of the various RTOs, ISOs, transmission owners, generating companies, and Electric Service Providers operating within their defined geoelectrical areas.

As I said in my July 31, 2008 Senate testimony: “I believe that decisions on whether particular transmission lines are needed for reliability are best addressed by the states and by the eight existing regional reliability councils. They have consistently done a good job on this in the past. I do not believe that either DOE or FERC has the experienced staff or other resources to do this as well as the regional reliability councils and the states.”

The designation of “corridors” which encompass some entire states and major portions of others seems to violate Webster’s definition. In such huge areas, there are undoubtedly more “historic, cultural, scenic or natural resources” than could possibly be listed here.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. I do not have expertise in the areas of “climate change policy” and “carbon reductions;” hence I do not feel qualified to comment.

Question 3. Does the Piedmont group support the development of renewable energy resources?

Answer. As I stated in both my written and oral testimony, the opinions I expressed at the hearings were entirely my own. Although I was listed as representing Piedmont Environmental Council, I was not acting on their behalf. I assume that Piedmont was involved in obtaining my invitation to testify, but my written and oral comments do not necessarily represent their views. In fact, I have never been an employee of Piedmont or a consultant for them. I appeared at the Senate hearings on July 31, 2008 pro bono, and did not receive a fee from Piedmont or from anyone else. Therefore, I cannot speak for Piedmont on this issue.

Question 4. Do you realize that in the east the most abundant renewable resource is wind power, located in West Virginia? How do you get that wind to load centers in DC, Philadelphia and New York without interstate transmission?

*Map has been retained in committee files.

Answer. I cannot judge the accuracy of the statement, “in the east the most abundant renewable resource is wind power, located in West Virginia.” But a casual glance at the Department of Energy’s map of wind resources suggests, to my admittedly amateur eye, that it isn’t. Rather, it appears that the East Coast from Maine to the Carolinas, Cape Cod and nearby islands, and the upper Great Lakes all have wind potential superior to West Virginia’s.

Wind generation has a low capacity factor (approximately 30%), and an even lower effective capacity, or probability of being available at the time of system peak (in the range of 8-11%). Hence the viability and cost-effectiveness of building long distance transmission to deliver wind energy to distant load centers—e.g., from West Virginia to DC, Philadelphia and New York—is highly problematic. There’s also the question of Transmission I²R losses over such long distances, and the likely need for voltage/reactive support (VARs).

In any case, this question appears to be based on the mistaken assumption that I am opposed to interstate transmission lines, or to bulk power transmission in general. This assumption is totally false. I do not automatically oppose transmission construction for any generating resources—wind, solar, geothermal, hydro, nuclear, oil, gas, or coal. Or solely for reliability. I believe that each case should be presented honestly, and judged on its own merits.

At the July 31 hearings, in answering a question (I believe from Sen. Murkowski) during the Q&A, I said that, to me, the issue isn’t whether or not we should add transmission infrastructure per se. It’s really about considering all options—including transmission, local and distributed generation, and DSM. But, more important, it’s about HONESTY, both in presenting the reasons for proposed transmission additions, and in applying standards and criteria. If we want to build transmission for new remote coal-fired generation, let’s say that, and let the case be decided on its merits. Likewise, if we want to build transmission for renewables, let’s say that, and let that case be decided on its merits. Finally, if we want to build transmission because it’s needed to make the existing system reliable, let’s say that, and let the case be decided on its merits. But let’s not disguise what we want to build for coal or renewables or whatever as “needed for the reliability” of the existing system, if it really isn’t. Let’s not use blackout scare tactics for transmission additions that are really wanted so that new generation can be sited hundreds of miles from load centers. And, in our planning studies, let’s apply standards and criteria correctly, not misrepresent them to indicate a “reliability violation” when there really isn’t one.

Question 5. You appear to advocate building more generation close to load centers. What kind of generation do you realistically think can be built close to load centers today?

Answer. As I said in both my written and oral testimony, all alternatives should be fully explored and carefully considered on a non-discriminatory basis—including local and distributed generation close to the load. Siting generation closer to the load centers it’s intended to serve has the benefit of providing inherently higher reliability, greater protection from terrorist attack, as well as insuring local area protection, voltage support, and close-in black start capability.

There’s no inherent limitation on the types of generating facilities that could be built close to load centers, but the US already has gas, oil and nuclear plants so located. Certainly gas, and renewables such as solar, could be sited even within large metropolitan areas. Gas-fired combined-cycle units which have very low emissions, and efficiencies on the order of 60%, are now feasible. DSM, of course, is a “natural” as a resource located within load centers.

Question 6. Can you provide specific examples of where a NERC Planning Standard was misapplied by not allowing time for system readjustments? Who, where, when?

Answer. In my opinion, NERC Reliability Standard TPL-003, Category 3 (C3), was misapplied by TrAILCo in proceedings before the Pennsylvania Public Utilities Commission in the application of Trans-Allegheny Interstate Line Company (TrAILCo) regarding the proposed 500kV TrAIL project and associated facilities. I came to this conclusion, and testified to that opinion, as an expert witness for the Energy Conservation Council, an intervener in the proceeding. This conclusion was based on my more than 45 years experience in bulk power system planning and reliability. (My bio is included with my written testimony.)

The C3 standard, sometimes referred to as “N-1-1,” provides for imposition of a first contingency, followed by manual system adjustments, then imposition of a second contingency. The phrase “manual system adjustments” allows for a wide variety of possible adjustments between the occurrences of the two contingencies; e.g., changing the outputs of generating units, modifying schedules, switching transmission lines, changing transformer and phase angle regulator taps, activating gen-

erating reserves, and any other actions feasible within a specified time frame (usually at least 10 minutes).

A number of contingencies were cited by TrAILCo as violations of N-1-1 testing under this standard, but “manual system adjustments” were not attempted between the first and second contingencies. In my view, this is an egregious error or misapplication; it applies a test to the system which is much more stringent than NERC Standards require, indicates a reliability violation where none exists, and implies the need for reinforcements which are not required to maintain reliability in accordance with national standards.

Question 7. Can you provide specific examples of where a NERC Planning Standard was misapplied by manipulating generation through the exclusion of committed units? Who, where, when?

Answer. I did not say in my testimony that “a NERC Planning Standard was misapplied by manipulating generation through the exclusion of committed units.” I did say the following: “In some cases, units well along in the process have been deliberately excluded from studies because they would solve a reliability problem, while others at the same place in the queue were included, precisely because they exacerbate a reliability problem. In my opinion, this makes absolutely no sense.” This approach was used by TrAILCo in the same Pennsylvania proceedings cited above. In my opinion, it violates the spirit of the NERC Standards process, and of the principle laid down by FERC, NERC, DOE and EPA that all standards and criteria must be applied on a non-discriminatory basis.

Intervenors in the Virginia TrAILCo case have alleged that compliance with the NERC Planning Standards was tested using load flow simulations that excluded significant existing and planned generating stations (including the existing Mirant Potomac station, and Dominion’s proposed Possum Point #7 and Warren stations); also, the studies assumed that no new plants, beyond those already possessing PJM interconnection service agreements, would ever be built in eastern PJM.

Question 8. Generation re-dispatch is allowed under NERC Operating Standards. Are you claiming that generation re-dispatch should also be allowed under NERC Planning Standards? If so, doesn’t this place the grid at greater reliability risk? If so, doesn’t this take away one of the primary tools that transmission system operators now use when real-time conditions may have 15 to 20 transmission lines and generators out of service?

Answer. Generation re-dispatch is allowed under NERC Planning Standards. It is inconsistent and illogical for the initial dispatch, prior to the imposition of any contingencies, not to recognize the possibility that contingencies will occur. Sometimes system planners select initial dispatches which appear neutral but in fact bias the apparent vulnerability of the system.

Many systems utilize re-dispatch in their planning studies. Not to do so, in my opinion, ignores one of the methods available to solve reliability problems. It also ignores the reality of how systems are actually operated—something for which system operators have castigated planners since I began my career in 1962! I personally believe that planning procedures, in general, should try to replicate how the system is actually operated in the real world.

The underlying problem is how to determine the amount of transmission transfer capability needed in a system. In my opinion, a comprehensive planning procedure would use multi-area Loss of Load Expectation (LOLE) studies to determine required transfer capabilities for given installed generation assumptions. The result would not require that economic dispatch always be followed; rather, it would use probabilistic techniques to optimize the system and determine the minimum interface transfer capabilities necessary to meet an overall LOLE requirement of 1 day in 10 years. This would in turn suggest where reinforcements might be necessary.

Adding transmission that really isn’t needed for reliability acts as a magnet for remote generation. It’s comparable to the way interstate highways radiating from an urban area attract new housing developments as each new section is opened. With interstates, housing developers are incited to build new subdivisions, and the ensuing growth often overwhelms the increased highway capacity. In power systems, generation developers are incited to locate generation more remote from load centers, making the system inherently less reliable. Adding transmission increases the transfer capability of the system, but does not in-and-of-itself enhance reliability. Reliability can only be improved by making the reliability standards themselves more stringent. As I said in my Senate testimony, Reliability is a function of the standards used, not the amount of wire in the air.

More important, increasing the amount of remote generation creates a reliability problem and a potentially devastating national security risk. With more generation sited at locations far from urban centers, those metropolitan areas become increasingly dependent on remote generation, and hence on long transmission lines. This

in turn makes them more susceptible to transmission contingencies which go beyond normal planning and operating standards, and increasingly vulnerable to terrorist attack.

Question 9. If there is a risk of having rolling blackouts unless more electrical transmission is added, do you believe someone has a responsibility to communicate that risk to the public?

Answer. This question presumes that “rolling blackouts” are the ipso facto consequence of not adding transmission. That simply is not the case. “Reliability” is of two types: “adequacy” (or “resource adequacy”), which means the sufficiency of resources to serve load; and “operating reliability” (a.k.a. “transmission reliability”) which means the ability of the synchronous interconnection or “grid” to survive sudden contingencies without dire consequences—overloads, low voltages, cascading outages, instability, system separation, or loss of firm customer load. So-called “rolling blackouts” refer to the former, not the latter.

“Rolling blackouts” are not blackouts in the sense of November 9, 1965, or August 14, 2003. They involve rotating feeder outages, voltage reductions (“brownouts”), and public appeals; they do not involve instability, system separations, and total loss of power supply over large geoelectrical areas. Also, “rolling blackouts” are caused by inadequate generating and related resources (DSM etc.), not by a lack of transmission. Of course, insufficient transmission can sometimes contribute to a resource availability problem, but in recent years I have seen very few examples. Multi-area LOLE studies which include transmission constraints between the specified areas, as described in my answer to Question #8 above, are the most effective way to determine if this is the case. Unfortunately, these are not frequently performed nowadays. The TrAILCo application before the Pennsylvania PUC, for example, never mentioned them.

On a related subject, NERC Standards permit controlled load shedding for unlikely combinations of contingencies and operating conditions. Some refer to these as “rolling blackouts,” a scare technique. The significant difference between controlled load shedding and a cascading failure (blackout) is that controlled load shedding is normally done for only short periods, after which service is restored. Restoration of service after a blackout, on the other hand, may take days.

I do believe that we all have an obligation to warn the public when there is a risk to power system reliability and national security for any reason—that is precisely what I intended to accomplish in my testimony before the Senate Committee on Energy and Natural Resources.

Question 10. Do you oppose market-based generation dispatch (de-regulation)? Do you believe de-regulation financially benefits consumers or financially hurts consumers?

Answer. I have no objection to “market-based generation dispatch” in principle. However, in my view, the manner in which “de-regulation” was accomplished has greatly compromised the reliability of the bulk power systems in the US, as well as financially harming consumers. My views are well-represented in trade press articles I’ve written over the past ten years, as well as in the reports I’ve co-authored as a charter member of Power Engineers Supporting Truth (PEST). These may be viewed on the PEST web site at <http://www.pest-03.org>. Interestingly, our views were shared by the majority of the invited papers presented at the panel sessions in Washington and Toronto co-sponsored by the DOE and the National Energy Board of Canada during 2005.

One problem I’ve noted is that, under de-regulation, far fewer interregional studies have been performed. For example, a number of major 500kV transmission additions have been proposed within the PJM (ReliabilityFirst) area, but to my knowledge no comprehensive studies have been performed to assess their potential effect on the Ontario and New York (NPCC) systems, or vice versa. Such studies were routinely performed before “de-regulation.” In fact, I was personally involved in many of them, serving on the MAAC-ECAR-NPCC (MEN) Study Committee and the Joint Interregional Review Committee.

History has shown that developments within one regional reliability council, RTO or ISO can have a profound effect on neighboring systems. For example, as early as the late 1960s, it was found that more than 40% of any transfer from the Ontario portion of NPCC to the southeast New York portion of NPCC would flow counter-clockwise around Lake Erie, through Michigan, and then through PJM before entering New York from the south. It was a classic example of the laws of physics—Kirchhoff’s Voltage Law, to be specific. Even a significant percentage of transfers from upstate New York to the New York City area were found to flow through PJM. This situation had become critical by the late 1970s, and the New York and PJM Power Pools finally agreed on a number of fixes.

In the 1980s, Hydro-Quebec and New England (both parts of NPCC) planned to build a 2,000 MW HVDC line between James Bay and the Boston area. A special MEN study was conducted; it determined that loss of the line could have a significant adverse impact on both PJM and New York. This led to an agreement whereby the capacity of the line was reduced, and its substation arrangements modified. More important, it was agreed that operation of the line (and the operation of all HVDC ties between Hydro-Quebec and its neighbors) would be coordinated with west-to-east power flows across both the PJM and New York systems.

These are just two examples of the importance of interregional studies—studies which have been conspicuous mostly by their absence in the post-deregulation industry.

Question 11. Do you believe that more electrical transmission creates a less reliable grid?

Answer. There is no simple or generic answer to this question. But, all else being equal, a grid that increases reliance on remote sources of power generation is inherently less reliable than a grid that connects load to proximate local generation.

Sometimes a transmission addition will enhance the reliability of the grid, as when it is truly needed for reliability. Other times, a transmission addition will exacerbate an existing problem or lower reliability, as when the increased transfer capability it provides will be used to increase long-distance power transfers across the grid. As I said in my Senate testimony: “Addition of new transmission facilities will increase transfer capability, but reliability can only be improved by making the standards themselves more stringent. Reliability is a function of the standards used, not the amount of wire in the air. Further, transmission additions will not increase the reliability of the system if the increased transfer capability is used to accommodate increased power transfers. The same reliability standards would still be in place. The transmission transfer capabilities would be higher, but the higher transfer capability would simply be used to carry higher long-distance power flows.”

Further, there’s a national security risk. Quoting again from my testimony: “If more generation is built in remote areas, and less generation and other resources are built close to load centers, then the load centers will be increasingly dependent on distant generating capacity—located perhaps hundreds of miles away. It would be like running a long extension cord to a friend’s house a block or two away to power your toaster, instead of plugging it into an electric outlet right in your own kitchen. The more major cities depend on long transmission lines, the more subject they will be to power outages and blackouts due to major contingencies on the transmission system. Indeed, this constitutes a national security problem, since these urban areas would be more at risk from terrorist attacks on transmission facilities.”

RESPONSES OF JAMES J. HOECKER TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. The study of cost allocation by the blue ribbon panel lists recommendations that seem to tend towards greater socialization of costs as opposed to greater use of participant funding. The conclusion would seem to be that this is the better way to encourage construction of transmission. A number of regions seem to depart from these principles in their cost allocation regimes that have been approved by the FERC. For example, the Midwest ISO allocates 20% of costs to customers of the ISO broadly and 80% more narrowly. Does this kind of formula result in transmission actually getting built?

Answer. If the Blue Ribbon Panel’s analysis and findings were reducible to a single idea it would be that all regional cost allocation processes should be subject to “clear, consistent and principled regulatory policy and oversight.” The panel believes that, because such guidance and limitations do not exist, transmission cost allocation determinations have been made in vastly different ways, using procedures that are not always transparent or respectful of all stakeholders, and often subject to parochial economic and even political interests. Each cost allocation process has therefore become an opportunity for every competing interest and interest group to reduce or eliminate its obligation to pay for the share of network it uses. The result is considerable uncertainty.

In the view of these experts, regional consensus about cost allocations may be desirable from the standpoint of avoiding contention among stakeholders but such processes should not be relied on blindly by economic regulators for purposes of deciding who pays for expansion of the grid. The parties to regional processes such as the one you have cited were not guided or governed in their decision making by express standards or principles. FERC therefore acted to approve regional cost allocations in many instances based, not on a record, but on the absence of opposition. The Commission made a practical decision to accede to these outcomes rather than

to engage in lengthy examination of whether there were better alternatives available. Arguably, this makes any judgment about what is “just and reasonable” more tenuous. The Panel therefore expressed a strong preference that federal regulators insist that cost allocation proposals be based on identifiable principles and that they exercise authority over all transmission rates, which they effectively do not do at present.

I agree with you that the Panel’s White Paper trends toward support for spreading the costs of grid upgrades and expansion more, rather than less, widely. I think the Panel would argue that in most cases involving extra high voltage projects, broader cost allocation is fairer and provides greater assurance of cost recovery.

Yet, the Panel does not contend that “socialization” is appropriate in all instances or that participant funding is inappropriate where the benefits are clearly limited to specific market participants. The White Paper simply recognizes that the highly integrated nature of the interstate transmission system and the large regional markets they now serve means that beneficiaries of a transmission project are more numerous and more widely dispersed than ever before. Given the dynamic nature of modern grid operations, there is increased likelihood that spreading the costs broadly rather than dividing costs among local or sub-regional loads will produce more equitable and economically efficient results and greater assurance of cost recovery.

MISO’s parceling out of the costs of the grid may not stifle investment or allocate costs to loads that do not benefit from a transmission investment. However, other regions and jurisdictions have chosen very different approaches. While differences among regional markets and infrastructures need to be accommodated and may partly explain the disparities, ratemaking seldom leads to such divergent outcomes. The Panel believes the absence of principles that guide all regional cost allocations will deter or delay transmission investment, especially as these allocations and the proposed facilities that they might otherwise support interact across state and regional boundaries.

Question 2. You criticize the NIETC process as being inadequate to ensure that sufficient transmission gets built. Would you support a greater role for FERC in siting transmission?

Answer. Traditional state involvement in determining the need for, and siting of, individual parts of the high voltage system represents a mismatch of regulatory authority and the operation of what has become an integrated multi-state grid. Like Congress in EPAct 2005, WIRES would prefer a balance of state and federal interests in siting transmission. The NIETC process as it exists could be strengthened by ensuring that corridors for transmission are designated, not just retrospectively to address existing patterns of congestion, but also for important economic development, energy security, clean energy, and other forward-looking reasons. Potentially, this could lead to a greater role for FERC in grid expansion. Even with such improvements, however, the procedural delays inherent in the NIETC process and the fact that such an evaluative process imposes resource demands that the Department of Energy is ill-equipped to meet may nevertheless argue for its elimination in favor of a federal siting regime. In either case, it is useful to remember that FERC has authorized and sited interstate natural gas pipelines for over a half century with great success, timeliness, and a high level of sensitivity to local concerns. I have no reason to think it could not perform equally well if given the authority to site transmission.

RESPONSES OF JAMES J. HOECKER TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. The designation of a corridor pursuant to EPAct 2005 does not constitute a decision to site a specific transmission line. The corridor is not a right of way. A corridor designation does not take property. In fact, it does not immediately affect the authority of the state(s) in which the facility would be located to determine its location, to require permits, or to impose conditions on its construction and operation insofar as cultural, scenic, or natural resources are concerned. Our experience with corridor designations thus far seems to indicate that they do not make the construction of new transmission lines more or less likely. Such a designation, however, does perform the valuable service of highlighting the congested areas of the existing transmission system which could cost consumers money or threaten reliable service if not alleviated.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. I do not believe that climate change initiatives can succeed unless the need for upgrading the transmission system is fully taken into account. Let me identify three reasons for this.

First, transmission is the principal means by which electricity from new clean energy resources such as wind, solar, geothermal, and biomass can be made available to the majority of American consumers. This is equally true for other low-carbon resources such as nuclear power and potential low-carbon coal generation. All of these resources are “location constrained” by their very nature and existing transmission infrastructure is inadequate to serve both the growth in traditional demand and development of these new generation resources.

Second, the transmission system must be made “smarter” as well as larger and stronger. By expanding the high voltage “backbone” network and ensuring that it becomes a “smart grid”, we can empower consumers to control their own carbon footprint, enable companies to make optimal use of existing assets, and turn the grid into a driver of energy efficiency and demand response.

Third, transmission ensures fuel diversity and provides the needed market access for new technologies like carbon capture and sequestration, wind power, and solar generation. Deployment of new transportation technologies like plug-in hybrid vehicles will necessitate a more uniformly strong transmission system to deliver power on demand.

Electric transmission therefore has a major role to play in addressing climate change. However, after a significant period of underinvestment, the grid is already challenged to meet traditional demand growth and expanding markets for electricity. Climate change initiatives will necessitate further investment in the transmission system.

Question 3. Do you agree that if you “love renewables” you cannot “hate transmission”?

Answer. I subscribe to that sentiment, although there appear to be many Americans who continue to hold fast to the notion that clean energy resources can satisfy most electrical demand without reliance on the grid. Electric transmission that is well-planned and efficiently operated can provide important environmental benefits for the consumer and the renewable energy industry that is typically building generation far from load.

Question 4. What transmission improvements are we going to need to make to accommodate the expected use of plug-in-vehicles?

Answer. A large-scale transition from gas-powered to electric-powered vehicles, in particular plug-in hybrid electric vehicles or PHEVs, would require continued high levels of service capability from all elements of the industry. The extent of the transmission improvements that would be needed depends on the level of market penetration that plug-in vehicles could achieve in the future and the ways in which consumers would use the electric system to “refuel” their cars. These determinants will dramatically affect the types of new facilities that would be needed to sustain this new mode of transportation.

The impacts on transmission may be modest, at least for the first decade or two in which PHEVs are commercial viable. For example, if a PHEV typically driven 20 or 30 miles on electricity consumes 2,400 kWh per year, one million such PHEVs would add 2,400 GWh of load, or a 500 MW plant operating at a medium (around 50%) capacity factor. To put it another way, some experts estimate that 100,000 PHEVs charging simultaneously would consume the output of one 220 MW generating plant. These do not appear to constitute a significant additional load on the system, especially if most charging were done overnight (i.e., in off-peak periods). PHEV advocates would also hasten to add that the battery storage capacity of each PHEV could be used to supplement system supply if dispatched in coordinated fashion during on-peak periods and that PHEVs would probably diminish the gap between on-peak and off-peak periods of utility operations, arguably leading to more efficient use of generating and transmission capacity.

At this juncture, we have a lot to learn about the impacts that large numbers of PHEVs would have on transmission. It matters a great deal when (i.e., what time of day) cars are re-charged and where this new PHEV load will materialize. If PHEVs add significantly to on-peak load, then additional transmission and control equipment would likely be needed to support that load increase. One may argue that some regulation of the interface between the transportation and utility sectors could promote greater efficiency.

Question 5. You noted that EPAAct was a step in the right direction but that you have doubts about its long-term success. Please elaborate.

Answer. I believe I expressed the greatest skepticism about the long-term success of the transmission corridor designation process, which in my view has proven cumbersome, controversial, and uncertain in producing results. In a larger sense, how-

ever, Congress has been timely in helping facilitate the transformative changes that the electricity system is undergoing, both in terms of its operational capabilities and the public interest objectives it is increasingly expected to serve. I believe EPAct supported the competitive market model, energy efficiency, incentives for transmission investment, and regional transmission organizations. These represent important if incremental steps toward a modern Twenty-First Century grid.

The principal challenge today is to avert having a perfect storm converge on the existing transmission network through the combined pressures of escalating electrical demand and generation investment, interconnection of location-constrained clean energy resources, aging transmission infrastructure, the complexities of integrated bulk power markets, potential electrification of the transportation sector, and the need to deliver demand responsiveness and energy efficiency. Moreover, the role of the transmission system in any successful climate change initiative or in meeting renewable portfolio standards is just beginning to be fully understood.

Basically, WIRES believes that substantial additional investment in the transmission system will be required during the next quarter century. Current estimates run as high as \$230 billion nationally. Many of these new facilities will represent major expansions of the grid, well in excess of the important reliability reinforcements that industry has invested in during the last six years. However, as long as the regulatory and institutional background of high voltage transmission operations reflect the balkanized legal and operational realities of the past instead of the increasingly integrated bulk power markets of today, uncertainty will slow investment and the procedural complexities in siting projects and allocating costs will delay or deter construction of new facilities. In other words, the support and guidance of the Congress will continue to be important to achieving the strongest electric system possible consistent with long-term consumer benefits and expectations.

Question 6. I understand WIRES has another transmission study coming out shortly. Can you give us a preview of that study?

Answer. Gladly. I expect that, when finished, the paper will provide a valuable review of “best practices” that have been adopted throughout the United States by utilities, regulators, politicians, and markets to facilitate expansion of the transmission network in order to accommodate location-constrained electric generation. This is the first time that this information is assembled in one place for the use of policymakers and industry.

Location-constrained generation refers to power production that faces limitations on geographical placement due to i) inputs; ii) technology; or iii) outputs. Most generation faces siting limitations for one or more of these reasons. Renewables that have the most significant locational constraints include wind, solar, and geothermal resources that is most efficient in areas far away from load centers and carbon capture and storage (CCS) technologies that requires specific geological formations for its outputs. These renewable resources also are intermittent, creating operational challenges for the transmission networks to which they connect. As investments in these new technologies increase due to the prospect of a carbon-constrained world, transmission systems must adapt. The report will focus on commercial, regulatory and technical implications of these locational constraints on transmission investment and siting decisions.

RESPONSES OF JOSEPH T. KELLIHER TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. You say in your testimony that the section 215 authority is adequate to protect the bulk power system from most reliability threats. It has always struck me that the system of remands and the appeals system in that section are enormously cumbersome and time consuming. Have you had to use that remand authority yet, and do you find it to provide timely resolution of reliability concerns?

Answer. As of this time, FERC has not used the remand authority to reject a proposed standard from the Electric Reliability Organization (ERO). To-date, FERC has approved 107 of 140 (filed as of 8/21/2008) proposed reliability standards. FERC found that these 107 reliability standards meet the statutory standard for approval, i.e., just, reasonable, not unduly discriminatory or preferential and in the public interest. While these reliability standards satisfy the statutory criteria for approval, FERC also identified concerns and areas for improvement. On that basis, FERC also exercised its separate authority pursuant to section 215(d)(5) of the Federal Power Act (EPA) to direct the ERO to submit to FERC “a proposed reliability standard or a modification to a reliability standard that addresses a specific matter... .” by directing that major modifications be made to 75 of the 107 approved standards. FERC found that 25 of the proposed standards were incomplete and were therefore “set aside” until the ERO modifies the standards by providing sufficient detail for

the standards to be effectively implemented. These standards were not approved or remanded.

A primary consideration when selecting these courses of action is that the ERO standards development process takes, on-average, approximately 4 years to produce a proposed standard. FERC's course of action to approve a proposed standard while immediately directing that modifications be made to improve the standard, enables both incremental and interim protection of the reliability of the bulk power system during the time that it takes to develop a new standard. If FERC used its remand authority instead, protection would be delayed until the standards development process returned an acceptable standard which could take years.

There is a single instance however, in which FERC used its remand authority to reject a definition proposed by the ERO. In Order No. 705, issued in December 2007, FERC remanded the ERO's proposed definition of the term "cascading outage" due to an unacceptable amount of ambiguity in the proposed definition and the fact that "cascading" already appeared in the glossary of defined terms and appeared to be adequate. In a June 30, 2008 filing, the ERO proposed several revisions to the three reliability standards approved in Order No. 705. In addition, the ERO indicated that, rather than revising the definition of "cascading outage," it removed the definition as redundant from its "glossary of terms" since the glossary includes a previously-approved definition of "cascading." The June 30 filing is pending before FERC.

Thus, in this instance, the time from FERC's order until a revised ERO filing was six months. This is much more than the period, e.g., 30 days, allowed by FERC in its ratemaking proceedings. As explained previously, remands of reliability standards (instead of just a definition) may take much longer than six months.

In July 2008, FERC approved revised reliability standards that represent the first occasion in which the ERO made improvements to mandatory reliability standards pursuant to FERC's directive. Thus, the remand process has not impeded FERC's efforts to date, but the approach of approving reliability standards and concurrently requiring submission of modifications may not work well in all circumstances.

Question 2. Do you believe that the system for siting of transmission facilities, relying as it does, primarily on state authority except within the NIETC corridors, is adequate to meet the needs of growing and increasingly regional electricity markets?

Answer. I believe the current siting process will prove inadequate to meet the needs of the Nation for a robust transmission grid that can support competitive wholesale power markets, assure just and reasonable rates, protect reliability, and meet the climate change challenge. The transmission grid in this country is interstate in nature, yet we continue to rely on state siting for expansion of this interstate and international network. In some states there is no state body to make siting decisions, so these decisions devolve to local officials. Decisions about grid expansion necessarily involve hard choices, weighing the regional benefits that flow from expansion against local impacts. I believe the federal government is in the best position to balance these interests. As a general matter, state and local officials cannot properly weigh regional benefits, in part because they have no duty beyond their individual state or municipality. By contrast, FERC can weigh these regional benefits and has demonstrated its ability to fairly weigh local impacts in a host of hydro-power and natural gas pipeline licensing cases stretching back decades.

Congress recognized this problem three years ago, when it concluded the transmission siting process was not working well and rewrote transmission siting law to establish—for the first time—a federal transmission siting process, albeit a limited process. I believe that conclusion was correct, but that the limited role Congress provided will not prove adequate over time. State and local siting is simply inconsistent with the interstate and international nature of the North American power grid. The end result will likely be a weaker power grid than the Nation needs in the future.

I have great respect for state regulators, and intend no criticism of my state colleagues. State siting is simply inapposite with the nature of the power grid, which is regional and international. State regulators take an oath of office to look out for the interests of consumers in a particular state, not a region. indeed, a state regulator that approved a transmission project that benefited a region at the expense of his or her state would arguably violate their oath of office.

Increasing FERC's siting authority beyond National Corridors would further the commitment toward infrastructure development and grid reliability that is needed to develop a truly national grid. The transmission siting authority offered in Energy Policy Act of 2005 (EPAct 2005) is a start, but to effectively treat a national concern, there needs to be a national solution. The clearest answer is to have federal jurisdiction over the siting of interstate electric transmission facilities. As we have seen with natural gas facilities, federal siting offers an efficient and timely remedy to

meet energy demands while, Mlle same time, protecting our environment and offering multiple opportunities for public input.

FERC's process for authorizing pipelines under the Natural Gas Act takes, on average, less than a year from the filing of an application. As a result, markets can be served quickly as demand arises. In our process, developers of a pipeline project come directly to FERC to pursue their project. Applicants are required, under the National Environmental Policy Act, to consult with appropriate federal, state, and local agencies (i.e., U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and State Historic Preservations Offices) with regard to endangered species, wetlands, and archeological sites. Applicants must follow all applicable laws and regulations to avoid or minimize impacts to these resources. While other entities (federal, state, local) have input to a project, a developer is not required to get approval from those other entities prior to applying for a certificate with FERC. FERC is the single lead agency for the applicant and all stakeholders to develop a public record to ensure a decision which is legally sustainable. The process is thorough and transparent. All due process is accorded within a satisfactory timetable for all participating stakeholders.

Question 3. Do you believe that the backstop authority can work well enough inside the NIETC corridors?

Answer. I believe that the limited transmission siting authority granted to FERC by the Energy Policy Act of 2005 inside National Corridors is an improvement to the status quo ante, but only a modest improvement.

Some of the limits to the new federal siting process relate to the way the statute is drafted. For example, it is not clear on its face whether the U.S. Department of Energy (DOE) can designate National Corridors to facilitate the development of untapped renewable energy potential and other electricity generation capacity in areas that are not now experiencing persistent congestion. One interpretation is that DOE can only designate a National Corridor to relieve existing congestion, rather than to prevent congestion from arising in the first place. To be clear, I do not agree with that interpretation. But if that is the prevailing view, then the benefit of the transmission siting provisions of the EPAct 2005 may be short-lived, serving to alleviate only the manifest congestion in certain regions that existed on the date of enactment of law rather than to accommodate development of new electricity generation and prevent congestion from arising in the future.

The National Corridors extend only to a portion of the country in need of transmission expansion. Currently congested areas should have a priority, but this type of hierarchy will leave the nation at a disadvantage for its future electricity needs. As an example, transmission lines needed to deliver power from regions in the country that are rich in wind or solar power to areas of growing demand are generally not within National Corridors. To the extent that the siting of these transmission lines will require federal assistance they will have to await corridor designation and then the attempt to site the lines through multiple state proceedings—a process that could take years. Therefore, while FERC will continue to make the backstop authority work well within the defined National Corridors, the lack of a national solution (see answer to Ringman question 2) will stifle the timely development of a national grid.

FERC is committed to making the new federal transmission siting process work as well as possible. Through the development of its Prefiling Process, FERC works with all participants to resolve issues at the earliest stages of project development before positions become calcified and the parties intractable. This expedites the development of needed energy infrastructure that is found through FERC's process to be in the public interest. The new process should work reasonably well inside the National Corridors, but it will not be sufficient to ensure that all necessary additions are made to the transmission grid in time to meet the nation's growing electricity needs.

Question 4. Do you believe that there is still significant residual discrimination in the provision of transmission service?

Answer. I believe the potential for undue discrimination and preference in transmission service has been sharply reduced. FERC recently completed a multi-year review of its transmission service policies, culminating in the issuance of Order No. 890 in February 2007. There FERC found that flaws in the pro forma Open Access Transmission Tariff resulted in transmission providers having an opportunity to engage in undue discrimination in the provision of transmission service. To remedy that potential for undue discrimination, FERC reformed the pro forma tariff in a number of ways, including: implementation of open, coordinated and transparent planning on both a local and regional level; imposition of requirements regarding greater consistency and transparency in the calculation of the transmission capacity available for use by customers; adoption of a "conditional firm" component to long-

term point-to-point service, expanding the service options available to customers; and, adoption of less stringent penalties for imbalances created by intermittent resources, such as wind turbines and solar power. At the same time, FERC retained core elements of Order No. 888, such as the comparability requirement, protection of native load, and state jurisdiction over bundled retail load.

FERC identified these particular areas of reform based on comments received in response to a Notice of Inquiry (NOI) issued in September 2005, followed by a Notice of Proposed Rulemaking (NOPR) issued in May 2006. FERC received approximately 10,000 pages of comments from hundreds of parties in response to the NOI and NOPR. The comments helped FERC identify those areas in which transmission providers continued to have the ability to exercise undue discrimination notwithstanding the long-standing obligation to provide open access transmission service. The reforms adopted in Order No. 890 individually, and taken as a whole, were designed to eliminate this remaining potential for undue discrimination in the provision of transmission service.

Most of these reforms were implemented by transmission providers through compliance filings submitted last year, although two important matters remain subject to on-going development. First, transmission providers continue to develop and refine their transmission planning processes in response to Order No. 890. Second, enforceable standards governing the calculation of available transmission capacity are being developed by the National Electric Reliability Corporation and North American Energy Standards Board. Although progress has been made in each of these areas, FERC will remain vigilant to ensure full compliance with Order No. 890 and, in turn, that residual opportunities for discrimination in transmission service are eliminated.

Question 5. Are RTO regions better at eliminating discrimination than non-RTO regions?

Answer. In my view, there is less potential for undue discrimination and preference in transmission service in areas where the grid is operated by regional transmission organizations (RTOs) and independent system operators (ISOs) (collectively, RTOs) than other areas. Most transmission in the U.S. is owned by vertically integrated utilities, whether they are investor-owned utilities, state and municipal utilities, or federal utilities. Where there is vertical integration there is the prospect of vertical market power exercise. However, in RTO and ISO regions there is a separation between ownership and control, greatly limiting the potential for vertical market power exercise. RTOs are independent operators of the transmission grid and of organized markets. RTOs do not engage in wholesale power sales. Because they are not competing with their own transmission customers, they have no incentive to discriminate against them. Moreover, because RTOs are not operated for profit, their customers have no reason to suspect that an RTO's decisions are made to favor the organization's own sales and purchases or its bottom line.

Several of the RTOs were formed in response to FERC's efforts to eliminate undue discrimination in our landmark open access rule, Order No. 888. Under Order No. 888 any eligible customer may qualify to be a transmission customer and move power anywhere within, out of, into, or through the RTO region at the same fixed transmission rate, without having to pay separate, additive transmission charges to each of the transmission-owning members of the organization. Further, independent generators may seek to interconnect with the RTO's transmission grid without concern that the interconnection process may be frustrated by the business interests of the transmission and generation owners of that grid.

Orders No. 888 and No. 2000 led to ISOs with independent transmission systems and to the replacement of several of the former "power pools" operated for the benefit of pool members with organized energy markets open to all qualified buyers and sellers on a nondiscriminatory basis. Any wholesale seller or buyer may transact through organized markets of an RTO. RTOs provide nondiscriminatory access to many buyers and sellers trading standardized products over a large region. An RTO also provides more open and nondiscriminatory access to information in that all market participants have open access to a considerable amount of publicly available market information, often in real time or near real time. In addition, an independent market monitor oversees the market for discriminatory practices or violations of other transmission and market rules, and produces periodic informational reports and analyses.

As an example of RTOs providing more desirable transmission and market services with reduced concerns over discrimination, the American Wind Energy Association reports that RTOs host nearly three-quarters of all U.S. installed wind capacity despite having only 44 percent of U.S. wind energy potential and only 53 percent of electric demand.

RESPONSES OF JOSEPH T. KELLIHER TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. Based upon the 2006 congestion study mandated by EPAct 2005, DOE has designated two geographic areas that are experiencing constraints and congestion that adversely affect consumers, as National Interest Electric Transmission Corridors (NIETCs) or National Corridors. The designation of a National Corridor neither proposes nor approves or supports any particular project(s). Rather, electric transmission facilities that are proposed to be located in these corridors are potentially eligible for the FERC permit process.

The designation of a National Corridor has no effect on state authority. National Corridor designation creates the possibility of federal transmission siting by FERC. If proposed electric transmission facilities are located in a state that has authority to approve the siting of the facilities and to consider its interstate benefits, the applicant must file an application with that state. Further, an applicant must be engaged in the state process for one year prior to initiating pre-filing with FERC. I emphasize that this one year limitation of initiating pre-filing was a discretionary act on behalf of FERC, and is not required by the transmission siting provisions of EPAct 2005. In Order No. 689, FERC stated its belief that EPAct 2005 clearly permitted parallel FERC-State proceedings; however, by giving the states a full year to process an application without any intervening federal proceedings, FERC adopted a position that was more fully respectful of state jurisdiction. I see no reason why FERC should seek to exercise its full transmission siting authority and authorize parallel siting proceedings at this time.

The mere designation of a National Corridor has no adverse environmental impacts and does not represent major federal action. As stated above, the designation of a corridor does not propose or approve a project; therefore, there is no need to conduct a NEPA analysis with the requisite studies of impacts upon historic, cultural, scenic or natural resources. However, if a qualified sponsor of electric transmission facilities enters into our pre-filing process to site electric transmission facilities in a National Corridor, they are required under NEPA to consult with the appropriate federal, state, and local agencies (i.e., U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and State Historic Preservation Offices) in regard to endangered species, wetlands, and archeological sites. They must follow all applicable laws and regulations to avoid or to minimize impacts to these resources.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. A carbon reduction policy will have immediate implications for the national grid. Such a policy will shift the U.S. electricity supply mix from a heavy reliance on coal to generation sources that have lower emissions, such as natural gas, or no emissions, such as renewables and nuclear energy. In 2007, coal was the fuel for approximately half of U.S. electric generation. Uncertainty over coal plant emissions regulations has caused thousands of megawatts of planned coal generation to be cancelled or put on hold. According to the Environmental Protection Agency's analysis of the Lieberman—Warner (S. 2191) proposed legislation, approximately 36,000 MW of current coal capacity would be retired by 2015 as a result of the legislation. To the extent climate change policy changes the U.S. electricity supply mix, different demands will be placed on the interstate transmission grid. Simply stated, we would need a very different power grid to transmit an electricity supply mix that has a much larger share of renewable energy and nuclear generation than today's U.S. electricity supply mix.

Climate change legislation also is expected to reduce the efficiency and increase the costs of new coal plants if they install the principal "carbon capture" technology currently available (the "monoethanolamine" process). A 2000 Electric Power Research Institute-Department of Energy study concluded that the energy needed by this process would reduce a generator's net power output by 29 percent and raise the production cost of electricity by 65 percent. Moreover, significant questions are unresolved about when carbon capture and storage (CCS) technology will be ready for wide-scale, commercial deployment. If CCS technology is not ready for such deployment on the timeline assumed in climate change legislation, the need for reliable baseload electricity facilities may require even greater dependence on natural gas (or the technologies discussed below).

Consideration of climate change legislation comes at a time when we are already facing a major challenge in ensuring an adequate and deliverable power supply. According to an October 2007 report from the North American Electric Reliability Corporation (NERC), long-term capacity margins (the margins of power supply over de-

mand) are inadequate. NERC states that projected increases in peak demands exceed projected committed resources after just the first few years of a ten-year planning horizon. According to NERC, some regions of the country, including California, New England and Texas, fall below target capacity margin levels as early as 2009-2011, even when including uncommitted generation resources.

As a result, even without climate change legislation, our Nation's reliance on natural gas as a fuel for electricity generation may increase significantly in the near-term, to the possible detriment of diversity in our fuel mix. NERC projects that, from 2005 to 2016, the portion of our power supply fueled by natural gas is expected to increase from 19 percent to 22 percent. NERC also reports that dependence on natural gas is particularly high in Florida, the Northeast, Southern California and Texas, with the latter expected to reach 58 percent by 2016.

Climate change legislation also is expected to increase our reliance on nuclear power and renewable energy. According to the Energy Information Administration's (EIA) April 2008 analysis of S. 2191 (specifically, comparing EIA's "core case" analysis to its "reference case"), the amount of generation (in megawatthours) from nuclear power and renewable energy would be about 210 percent and 40 percent higher in 2030 under the core case. The core case envisions the addition of 268 gigawatts of nuclear capacity and 112 gigawatts of renewable capacity by 2030.

Increased reliance on nuclear and renewable technologies will raise reliability issues. The variability of wind and solar energy requires system operators to have adequate ancillary services such as voltage support, frequency control, increased base-load unit dispatch flexibility, and spinning reserves. Also, the output of wind and solar facilities at times of peak needs may be significantly less than their maximum possible output and are therefore not an acceptable substitute for cancelled and displaced baseload generation plants. These factors must be addressed to ensure reliable and effective integration of renewables into the electric grid. Further, the large size of nuclear units often requires significant investment in transmission facilities to deliver the output of those units and ensure reliability if reactors trip "off-line." Transmission expansions must be planned and built sufficiently far enough in advance to be operational when the new nuclear units are ready to generate power.

In order to shift to new "clean" generation sources, the nation will need to have a buildup of new transmission facilities, particularly from the sources of nuclear and renewable energy to the market for the energy. Such new sources of energy are not expected to be located near the market area and will require significant transmission expansion, which to date has been a lengthy process, and in some cases, has taken more than a decade to site and build major projects.

Given the above, the nation could find itself caught in a predicament in that large amounts of nuclear and renewable-sourced electricity will need to be transmitted long distances across state lines to replace some of the coal-fired generation lost due to a carbon reduction policy. As discussed above, the country could suffer from a mismatch between the need for regional grid expansion and the lack of an adequate siting regime.

These uncertainties and expected lead times mean that in order to meet our demand for electricity, we can expect a new build out of gas-fired generation serving as a backup to the intermittence of renewable generation. According to NERC's projection from 2005 to 2016, our nation's reliance on natural gas for power generation, even without climate change commitment, is expected to increase from 19 to 22 percent. More gas-fired generation, in turn, will increase the nation's demand for natural gas which will further increase the need for gas infrastructure and, most likely, increase natural gas imports in the form of liquefied natural gas. Fortunately, we have a federal process for siting natural gas infrastructure which offers an efficient and timely remedy to meet energy demands while, at the same time, protects our environment and offers multiple opportunities for public input.

Question 3. One of the goals of EPAAct was boosting transmission investment. You testified that since EPAAct's enactment, investment has increased with \$6.3 billion invested in 2005 and \$6.9 billion in 2006. What role have incentives played in the trend of increasing transmission investment?

Answer. I believe FERC transmission incentives policy has played a critical role in reversing sustained underinvestment in the U.S. transmission system and putting grid investment on the right track for the Nation. Since the enactment of EPAAct 2005, a number of transmission developers have applied for and received approval for a wide range of incentives made available by FERC in Order No. 679 and 679-A. Many oldie incentives reduce risks for new transmission projects that are typically characterized by high costs and long lead-times and allow for more timely recovery of investment costs before service commences. These incentives include recovery of 100 percent of construction work-in-progress, recovery of pre-commercial

expenses, such as regulatory permitting, and recovery of prudently-incurred transmission plant that must be abandoned for reasons beyond the control of the project sponsor. Transmission developers have also applied for and received approval for the return on equity incentive in Order No. 679 that allows project developers to receive a return on equity in the upper range of the zone of reasonableness for projects that meet the requirements of EAct 2005 to ensure reliability or reduce the cost of delivered power by reducing congestion. This incentive is intended to attract new investment in transmission facilities and can provide certainty for project developers since FERC may make its determination on the appropriate return on equity at the time of the initial application. In my view, if we want to maintain and increase U.S. grid investment, it is critical that we continue current policy on incentives. In particular, if FERC were to reverse itself and cut approved returns on equity, the likely result will be lower grid investment, forfeiting the gains of recent years.

Question 4. To date, FERC has not used the back-stop siting authority granted to it by EAct. However, I understand that Southern California Edison Company has started pre-filing activities with the Commission after the State of Arizona denied the company's request to site a transmission line. What can you tell us about this proceeding?

Answer. Southern California Edison's (SCE) Devers-Palo Verde No. 2 project (DPV2) is a 267-mile 500 kV transmission line from California to Arizona (97 miles in Arizona). The proposed project consists of two segments: the Revers-Harquahala Line (225 miles) and the Devers-Valley No. 2 Line (42 miles). DPV2 would run adjacent to the existing 500 kV DPV I line and would be located entirely within DOE's Southwest National Interest Electric Transmission Corridor (NIETC).

SCE submitted applications to the California Public Utility Commission (CPUC) in April 2005 and the Arizona Corporation Commission (ACC) in May 2006. The CPUC approved the California portion in January 2007, and the ACC denied the Arizona portion in June 2007. SCE appealed the ACC decision in August 2007 and subsequently filed a joint request with the ACC to stay the appeal in order to continue working towards a resolution.

SCE has entered FERC's transmission line siting pre-filing process for DPV2. During this process, FERC staff has and will continue to work with SCE to make sure that all interested stakeholders, including the ACC, have been made aware of the proposed project and have had the opportunity for their views and recommendations to be considered. Milestones reached in the pre-filing process are listed below.

- SCE initiated consultation with the Office of Energy Projects (OEP) on February 25, 2008
- SCE filed a pre-filing request on May 16, 2008
- OEP Director approved SCE's pre-filing request on May 30, 2008
- Commission issued the Notice of Intent (NOI) to prepare a draft EIS on June 17, 2008 (comment period on NOI ended August 1, 2008)
- Commission staff held two scoping meetings in Arizona, July 8-9, 2008

FERC's permit review process for DPV2 will be limited solely to facilities located in Arizona; however, our NEPA review will include Arizona and California facilities. Commission staff has commenced review of SCE's data submissions and intend to prepare a draft EIS upon completion of this review. The draft EIS will be made available for public comment.

On August 14, FERC denied the ACC's request to intervene and to stay the proceeding. FERC's regulations do not allow interventions during the pre-filing process. FERC dismissed the motion for stay because FERC does not automatically stop processing case when relevant regulations are under review. With respect to the denial of the motion to intervene, the pre-filing process is not a formal proceeding before FERC. Unlike the application process, the pre-filing process does not result in any formal Commission declaration that could be subject to rehearing or appeal. Therefore, there is no need for formal party status in the pre-filing process.

FERC staff is currently engaged in developing approaches for appropriately addressing a number of challenges posed by DPV2. These include among others:

- Congestion evaluation (what is a significant reduction in congestion)
- Analysis of reasonable alternatives (wire and non-wire alternatives)
- Environmental impacts (particularly direct impacts to Kofa National Wildlife Refuge)
- Cumulative environmental impacts (incorporating current concerns on climate change and role of carbon dioxide emissions)

Question 5. Some have charged that FERC's transmission rate incentives, promulgated pursuant to EAct 2005, are becoming the "new normal" standard for transmission ratemaking at FERC. Please respond.

Answer. Every transmission incentive request has been decided in a manner consistent with Order No. 679, which was approved unanimously by the Commission. It is important to recognize that not all requests for incentives have been granted. Those requests that were determined to be inconsistent with Order No. 679 were rejected. If rate incentives were the "new normal" standard, presumably every request would have been granted, and incentives would also have been extended to existing facilities. In my view, FERC implementation of the transmission incentives provisions of EAct 2005 has been completely consistent with the statute and Congressional intent. The object of section 219 was securing greater grid investment. Congress recognized that rate incentives, including higher returns, are a proven means of securing greater investment by regulated utilities. We issued an incentive rule and have been consistently applying that rule. The end result is grid investment has roughly doubled and major backbone transmission projects are being proposed in many regions of the country.

Question 6. Do you agree that if you "love renewables" you cannot "hate transmission"?

Answer. The lack of adequate transmission infrastructure is a barrier to increased development and use of renewable energy. Much of the renewable energy potential (geothermal, wind and solar resources) in the United States is located in areas that are remote from the transmission grid. FERC has recognized the urgent need for proactive transmission development to access renewable resources. In an attempt to resolve this issue, FERC is acting to encourage increased grid investment, improve regional transmission planning, and remove regulatory barriers at the wholesale level to address development of renewable energy.

For renewable energy to develop smoothly and efficiently there not only should be clear and equitable power transmission system rules and cost allocation methods, but also a federal electric transmission siting regime that resembles the successful siting program for interstate natural gas facilities. The fundamental principle that allows for the efficient authorization of natural gas pipelines is the Natural Gas Act's exclusive authority for FERC to site and establish rates, terms and conditions for these projects. Further, with a determination by FERC that a specific project is in the public convenience and necessity, the right to acquire lands necessary for the construction of that project attaches to the certificate. This does not mean; however, that other federal statutes such as the Clean Water Act or the Endangered Species Act do not apply. All relevant statutes must be complied with and are included within the process established by FERC. As a result, and as an example, during 2007 approximately 2,700 miles of high pressure, large diameter, natural gas pipelines were authorized by FERC.

RESPONSES OF MARSHA H. SMITH TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. You suggest that States should have the primary role in siting decisions and that such decisions should be regionalized, not nationalized. Can you describe existing or developing regional authorities that might be able to carry out such functions?

Answer. In 2002, Western Governors and four federal agencies (DOE, DOI, USDA, and CEO) signed a Western Transmission Permitting Protocol. See <http://www.westgov.org/wieb/electric/Transmission%20Protocol/9-5wtp.pdf>. (The Premier of Alberta subsequently joined the protocol.) The Protocol has not been tested yet. It is unclear how the coordination under the Protocol comports with the federal interagency coordination required, but not yet achieved, under Section 1221(h) of EAct. It is also unclear what effect, if any, the federal interagency MOU executed under Section 1221(h) has had in practice.

With regard to the Organization of MISO States (OMS), it is our understanding that the 14 State commission members have a number of activities at several levels. The OMS Transmission Planning and Siting Work Group participates continuously in the Midwest ISO's planning process, providing a link between the regional planning process and the individual State commissions in that region that will process specific project applications. This linkage provides an awareness of the planning process and access to the information used in it. In addition, the Midwest ISO's process allows States to comment individually or through OMS.

Five States within this region undertook an explicit comparison of their siting processes. Its report of completed tasks is published at <http://www.misostates.org/NWSubgroupConsolidatedTasks1through3FinalReport08172006.pdf>. Besides the for-

mal report, we have been told by those who worked on this project that they were able to develop an understanding of the siting process in neighboring States and now have easy access to counterpart staff members. This particular process has established a general sense that applications can be coordinated informally among any two or three States affected by a multi-State project.

The OMS is also observing the Joint Combined System Plan (JCSP) being developed by the Midwest ISO, PJM, other RTOs, and other transmission providers in the Eastern Interconnection. Participating in this economic and engineering planning exercise gives State commissions an insight into the elements considered in the planning.

While the collaborative work done through the OMS greatly assists State commissioners and their staff with a deeper appreciation of the regional factors that inform their work, OMS has no decisional authority of its own. That responsibility rests with State and federal agencies as provided by their respective statutes.

Question 2. Cost allocation also seems to be difficult if left to single States. How can disputes about cost allocation be made across a multi-State region encompassing both suppliers and potential customers?

Answer. The allocation of costs of transmission projects to improve system reliability has not been a problem. Many of these projects are local in nature. The cost allocation issue is typically raised in the context of decisions to build transmission to reach new generating resources.

Generally in the West, the allocation of the cost of transmission to reach new generation will likely be addressed in the same way as in the past. That is, when a buyer (e.g., load serving entity) decides that it wants to acquire power at the other end of a proposed transmission line, it will agree to pay for a share of the cost of the line equal to the share of capacity on the line it receives. As has happened in the West in the past, multiple LSEs will likely collaborate in buying shares of a line to a specific generating resource area. In reviewing a proposed cost allocation, PUCs will typically compare their company's share of the cost of the proposed line plus the cost of the power that would be carried over the line against alternative supply and demand side resources. If the delivered price of power is attractive, they will approve their company's share of the cost of the line. The new challenge to this historical way of allocating costs is how to address the "supersizing" of lines to renewable resource rich areas, where no single or group of LSEs needs the power in the immediate future, but where there would be substantial economies of scale if the line was sized larger than needed in the immediate future. The federal government has an important role to play in financing the supersizing of new transmission to areas rich in low carbon, location-constrained generating resources.

A prime example of States working together on cost allocation of new transmission lines is the Northern Tier Transmission Group (NTTG) formed in 2007. Currently, proposed transmission projects in the NTTG footprint total approximately \$10 billion. NTTG is guided by a Steering Committee consisting of transmission providers, State regulators, and State consumer advocates working together to develop and encourage the implementation of a transmission expansion plan for an area including Oregon, Idaho, Utah, Wyoming, and Montana. NTTG created a Cost Allocation Committee, consisting of State regulatory and consumer advocate staff and of public and member-owned NTTG members, to work alongside the NTTG Planning Committee in the development of transmission expansion plans every two years. The planning and cost allocation processes invite input from generation suppliers and transmission customers in open stakeholder meetings conducted throughout the planning process. Recommendations on cost allocation accompany the transmission expansion plan to the NTTG Steering Committee for action. Ultimately, the NTTG Steering Committee will forward an approved plan with recommended cost allocations to affected State agencies. Finally, the NTTG Steering Committee charter provides a dispute resolution process available to any supplier, customer, or other party that includes negotiation, mediation, and arbitration.

RESPONSES OF MARSHA H. SMITH TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp State authority to site transmission lines? Does it adversely affect historic, cultural, scenic or natural resources?

Answer. Thus far, the designation of NIETCs has been counter-productive and triggered new State/federal conflicts. Yes, FERC pre-emption of State siting decisions on projects within NIETCs would usurp State siting authority even where States have made timely permitting decisions. The impact federal pre-emption of the States on historic, cultural, scenic or natural resources is unclear. There would be no effect on such resources on federal lands or State-owned lands because

FERC's eminent domain authority only extends to private lands. It is not known whether FERC would be required to protect historic, cultural, scenic or natural resources on private lands.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. The impacts on the grid would be substantial. For example, in the West, many of the best renewable resources are in areas without a large transmission network. The impacts on the grid from adding nuclear power plants or coal plants with carbon capture and storage are less clear since there is greater flexibility in the siting of those resources than in the siting of most renewable generation.

Question 3. At last month's transmission hearing, South Dakota Commissioner Hanson noted that "it seems fairly certain that State-by-State siting authority will not yield any near-term results for rapid expansion of the transmission system" and that "Federal authority with State assistance appears to be a must if we are to move forward in developing a robust interstate grid for renewable energy." NARUC does not appear to have a consistent position on this siting issue. How do you respond?

Answer. In July of 1995, NARUC adopted a policy resolution supporting State jurisdiction over the siting of electric transmission facilities. Since that time NARUC has consistently opposed legislative provisions proposing federal siting for transmission facilities. With regard to communicating our opposition to federal siting provisions to the members of the Senate Energy and Natural Resources Committee, beginning with a May 2000 letter sent to Senator Frank Murkowski, then Chairman of this Committee, and in numerous testimony before this committee since 2001, NARUC has repeatedly reiterated this position. Additionally, NARUC submitted Op-Ed pieces to the USA TODAY and the Washington Post as early as June of 2001 expressing opposition to federal siting.

In all national organizations there will be members who, for situations that are unique and/or important to a particular State or region, must take a position that does not agree in all respects with the sentiments of the organization as a whole. It must be noted that Commissioner Hanson did not represent his position as that of NARUC and that he was not appearing on behalf of NARUC. NARUC has always encouraged its members to participate in the legislative process, first for the betterment of their respective State, and second for the organization.

Further, NARUC made a deliberate decision to work constructively and cooperatively with both DOE and FERC to implement the process that was established by the Energy Policy Act of 2005 with regard to federal siting authority, notwithstanding our consistent and strong opposition to enactment of legislation that preempted State jurisdiction in this area.

Question 4. You testified that federal agencies are the major cause of delay in transmission permitting in the West. Please elaborate. Has there been no improvement in this area since the enactment of EPAct?

Answer. To my knowledge, no survey of federal agency permitting delays has been conducted. Such a survey of federal agency permitting delays would be useful. Anecdotal information suggests that the pre-EPAct problems in securing timely action by federal agencies remain.

For example, in 2002 the Arizona Corporation Commission issued Tucson Electric Power (TEP) a permit to build a 345kV transmission line from Tucson to Nogales. Relative to a portion of the line that would be on U. S. Forest service land TEP went through an EIS process which resulted in a Forest Service position that the route approved by the ACC was unacceptable. TEP pursued all avenues provided at the Federal level (including a filing under rule 216H) to try and expedite the decision process but ended up slogging through a four year process before being told "no" relative to the route approved by the ACC. In February 2006, TEP filed a request for federal agency action on the permit application under the Energy Policy Act Section 1221(h). Subsequently, TEP has met with the local Forest Supervisor to discuss possible routes that would be acceptable to the Forest for the TEP project. A tentative agreement has been reached on a "hybrid" route that uses a portion of the route approved by the ACC and uses a portion of the route favored by the Forest Service on Forest land. TEP has also been discussing with DOE what next steps would be required to obtain Federal approvals for the hybrid route. Once there is a better understanding of the Federal process to move forward, TEP will likely file with the Corporation Commission for a reconsideration of their approved route for the hybrid route. See: <http://www.tep.com/Company/News/TransLine/index.asp>

Question 5. Is Idaho participating in the DOE/Western Governors Association's collaborative process for regional transmission facilities? If so, what has been your experience with that new process?

Answer. Idaho is a signatory to the WGA Transmission Permitting Protocol, but as noted above the Protocol has not been tested yet. Idaho is also participating in the new WGA Western Renewable Energy Zone (WREZ) project that was launched at the end of May. It is too early to know the effect of the WREZ process on collaboration to build new regional transmission. Idaho also actively participates in the Northern Tier Transmission Group which has a process for addressing cost allocation among States for new regional transmission.

Question 6. Do you agree that if you “love renewables” you cannot “hate transmission”?

Answer. If you want reliable and affordable electricity, you must support adequate transmission facilities. In addition, transmission is essential for utility-scale wind, solar, and geothermal generation. Other renewables, such as photovoltaics, land fill gas, and biomass do not require as much transmission. If widespread deployment of renewable energy is the goal, new transmission is needed in the right areas and of the right size to minimize costs and environmental impacts.

RESPONSES OF KEVIN M. KOLEVAR TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. Do you believe that your authority to designate corridors of national interest is limited to areas that are identified in the congestion reports as having significant congestion? If not, what other criteria would allow you to make designations?

Answer. In the published May 7, 2007, notice responding to comments received on the 2006 National Electric Transmission Congestion Study and asking for comment on two draft national interest electric transmission corridors (National Corridors), the Department noted that EPAct 2005 explicitly authorizes the designation of a corridor in “any geographic area experiencing electric energy transmission constraints or congestion that adversely affects consumers” [16 U.S. C. 824p(a)(2)]. Accordingly, the Department stated its conclusion that it may designate a corridor in an area in which existing constraints would create congestion adversely affecting consumers if additional generation were developed without simultaneous development of associated transmission capacity.

In the Department’s Report and Order of October 5, 2007, in which it designated the two National Corridors, it reaffirmed this conclusion. However, because the problems that led to the designation of these corridors involved existing, rather than prospective, congestion, the Department did not rely on the authority discussed above in making these designations.

Question 2. Is the reliability system being developed under sec. 215 adequate to protect the bulk power system?

Answer. We defer to the Federal Energy Regulatory Commission (FERC) Chairman Joseph Kelliher’s address of this issue in his July 31, 2008 testimony to the Committee.

Question 3. With regard to the West Wide Energy Corridor, I am concerned with the location of the proposed corridor through the Sevilleta National Wildlife Refuge in New Mexico. In particular, I would like to know why the proposal does not follow an existing Right-Of-Way through the Refuge, of which there are two, and instead upgrade one of the existing transmission lines? My understanding is the current proposal would place new transmission lines through sensitive wetland areas near the Rio Grande instead of along the dry desert uplands. In addition, this may jeopardize the Federal Government’s ownership of the Refuge. I am told that the original transfer agreement with The Nature Conservancy stated that if the land is used for a commercial purpose, then the ownership of the land will revert to The Nature Conservancy. Have you considered these issues?

Answer. First, it is important to note that the agencies undertaking implementation of Section 368 will not be designating a corridor through the Sevilleta Wildlife Refuge. The PEIS only identifies a potential route for future, specific rights of way. Any future development through the Refuge will need to comply with the provisions of the National Wildlife Refuge System Improvement Act of 1997 (PL 105-57) and take into account the provisions of the transfer agreement with the Nature Conservancy. The Fish and Wildlife Service advised the agencies that it would address any requirements, such as agreements with a previous owner over land use, during its compatibility determination when, and if, specific projects are proposed.

The agencies are aware of the issues raised. They identified this potential route only after consideration of all other alternatives, and with recognition of the difficulty of any future development. There is no alternative route around the refuge, which is constrained on the east by White Sands Missile Range and on the west by a wilderness area. The proposed route through the Sevilleta National Wildlife

Refuge was selected after a search of alternate routes around the refuge was unsuccessful, and it was selected to minimize the length of the Refuge that could be crossed by an energy transport project.

Early in the corridor siting process, the Agencies did consider following the existing electric transmission line right of ways (ROW) through the refuge (located west of the 1-25 ROW), but each of these would have resulted in future ROW crossing the Refuge that would be almost four times greater in length (about 14 miles) than the proposed route. The route through Sevilleta National Wildlife Refuge is identified in the PEIS because it is the route with the least impact to resources for energy transport facilities connecting sources of generation and areas of demand through this part of New Mexico.

Question 4. What consultation have you had with local governments and state land offices about local land use plans and priorities? For example in Dona Ana County, New Mexico, the proposed route will go through the USDA-NM State University Jornada Experimental Range in addition to lands near the Organ Mountains that I am considering offering legislation to designate as a National Conservation Area. The community of Las Cruces will also likely have concerns about negative impacts on its viewshed of the Organ Mountains Wilderness Study Area.

Answer. We undertook an extensive effort to consult with State, regional, and local offices throughout the preparation of the Draft Programmatic Environmental Impact Statement (PEIS). Please see the attachment entitled "State and Local Government Consultations" for a detailed list of these efforts. As a result of their involvement, these offices have incorporated discussion of the project with their constituents as part of their routine engagement with their stakeholders. The project has benefited significantly from the high level of public engagement.

In the Draft PEIS, Corridor 81-272's original route intersected the BLM-administered Areas of Critical Environmental Concern (ACEC) in the Organ/Franklin Mountains. In response to comments received on the Draft PEIS from citizens and environmental groups in New Mexico, the corridor was revised and no longer crosses the ACEC. Corridor 81-272 now passes south and west of the Range following an existing 345-kV transmission line.

The proposed corridor, located about 5 miles west of Organ Mountains Wilderness Study Area, does not in and of itself authorize any projects. Applicants seeking authorization within the corridor would be required to address visual impacts associated with the proposed project.

Question 5. How are you going to account for the connectivity of the West Wide Energy Corridor with private and state lands that are currently not included in the proposal? What are the steps you intend to take to make this corridor functional and operative given the current corridor is composed of unconnected segments? If this is not a streamlined process, what is the incentive for utilities to use these corridors?

Answer. The implementation procedures that will be part of the agency decisions designating corridors will include processes for considering and designating future corridors under Section 368(d). The land management agencies will be able to use these procedures to work with project right-of-way applicants and with tribal, State and local government officials as the need arises to accommodate future projects that cannot be planned for today, given the uncertainty of the energy needs of the region.

Authorization of projects to cross non-Federal lands is at the discretion of the appropriate Tribal, State, and local authorities, and is beyond the authorities given to the Agencies by Congress under Section 368. Projects crossing non-Federal lands will be subject to the regulations as well as any stipulations required by the applicable State and/or local authorizing agency.

The Programmatic Environmental Impact Statement provides advantages to project proponents for using the corridors by providing an integrated set of compliance measures across administrative boundaries and by a siting the proposed corridors using a process that has avoided many of the major land-use conflicts inherent in project development.

RESPONSES OF KEVIN M. KOLEVAR TO QUESTIONS FROM SENATOR DOMENICI

Question 1. What is the effect of a National Interest Electric Corridor designation? Does it usurp state authority to site transmission lines? Does it adversely affect historic, cultural, scenic, or natural resources?

Answer. The effect of a National Corridor designation is to delineate geographic areas within which, under certain circumstances, the Federal Energy Regulatory Commission (FERC) may issue permits for "the construction or modification of electric transmission facilities" [FPA section 216(b), 16 U.S.C. 824p(b)], if certain condi-

tions exist. The states, however, retain authority for approval of the siting of transmission facilities. Designation of a National Corridor does not affect legal protections granted to historic, cultural, scenic, or natural resources that may be within the bounds of the corridor.

Question 2. What are the implications for the grid if the U.S. changes climate change policy and commits to carbon reductions?

Answer. In general, policy reducing carbon emissions would have important implications for the Nation's transmission grids, and the magnitude of those implications would be directly related to the extent and timing of the reductions being sought. Over time, a carbon reduction policy would affect the technological composition of our generation capacity, and the locations and relative economics of that capacity. Inevitably, this would lead to changes in the pattern of regional and interregional flows of electricity from generators to urban areas. In order to accommodate large-scale renewable generation and other sources such as clean coal with carbon capture and sequestration technology and nuclear power plants, substantial amounts of new generation capacity would need to be developed in relatively unpopulated areas, and large amounts of additional transmission capacity would be required to bring this power to load centers. Thus, expanding and modernizing the grids would be essential to the success of a carbon reduction strategy.

Question 3. As written, EPAct directs DOE to study the existing constraints and congestion on the nation's grid. What about the lack of transmission adequacy? Can that be viewed as a "constraint" for purposes of the Department's transmission study and Corridor designation process?

Answer. On May 7, 2007, the Department published a notice in which it responded to comments received on its 2006 National Electric Transmission Congestion Study, and asked for comment on two draft national interest electric transmission corridors (National Corridors). In this notice, the Department responded to commenters who took diverse positions on the question of whether the Energy Policy Act of 2005 authorized the Department to designate a corridor in an area in which congestion was only prospective, rather than already in existence. The Department noted that the Act explicitly authorizes the designation of a corridor in "any geographic area experiencing electric energy transmission constraints or congestion that adversely affects consumers" [16 U.S.C. 824p(a)(2)].

Accordingly, the Department stated its conclusion that it may designate a corridor in an area in which existing constraints would create congestion adversely affecting consumers if additional generation were developed without simultaneous development of associated transmission capacity.

In the Report and Order the Department issued on October 5, 2007, in which it designated the two National Corridors, DOE reaffirmed this conclusion. However, because the problems that led to the designation of these corridors involved existing, rather than prospective, congestion, the Department did not rely on the authority discussed above in making these designations.

Question 4. Why are the geographic boundaries for each national corridor so broad?

Answer. In each of the two National Corridors, the areas experiencing the adverse effects of congestion are very large, and there are numerous existing or potential generation sources that might be tapped to better serve these areas, if additional transmission capacity were to be developed.

The Department could have designated much smaller or narrower corridors if it had been prepared to identify certain generation sources as especially suitable or appropriate, and then identify routes for transmission lines that would deliver the electricity to drop-off points near or within the congested areas. In the Department's view, this was a much more expansive and intrusive role for DOE than the Congress had intended, because it would preempt decisions that should be made by industry or by agencies with explicit siting authority.

The Department concluded that to deal with congestion problems in these particular areas, it was best to designate broad areas that encompassed diverse generation options, and let industry participants, state regulators, and, if appropriate, the Federal Energy Regulatory Commission, determine which facilities should be developed (if any) and where they should be sited.

Question 5. I understand that DOE is now beginning the process of developing its 2009 Congestion Study as required by EPAct. How is the Department approaching this task?

Answer. By mid-September 2008, the Department will have hosted six regional workshops in various cities across the country in which we have asked stakeholders from the region to give us their ideas about how to shape and focus the 2009 Congestion Study to maximize its value. We have also invited participants in the workshops to give us their suggestions for improving the process for the study, and for

citations to appropriate data sources and existing or in-process studies by States, regional transmission organizations (RTOs), regional reliability organizations, utilities, or other entities. Where possible, the workshops have been co-located with the annual meetings of regional organizations of state regulatory officials, to make it easier for them to participate in the workshops. The workshops have also been webcast, to make them available to individuals who are interested but unable to attend in person.

At each of these workshops, we have reserved time for bilateral meetings with State officials or other stakeholders who wish to discuss congestion matters with us in a bilateral setting. We have also emphasized that until such time as a near-final version of the 2009 Study is under review at the Department, we will maintain an "open-door" policy and meet with any individuals or organizations that wish to discuss matters related to congestion with us.

In the Western Interconnection, we are working collaboratively with the Western Electricity Coordinating Council's (WECC) Transmission Expansion Policy Planning Committee (TEPPC). At our request, TEPPC has undertaken a review of recent sub-regional transmission planning studies and a review of recent historical data concerning electricity flows and transmission congestion in the West, and will make these products available to us as inputs to the 2009 Study.

In the Eastern Interconnection, at our request the Lawrence Berkeley National Laboratory has engaged Open Access Technology International (OATI) to conduct somewhat similar studies of historical electricity flows and congestion patterns. DOE intends to host a public technical conference in January 2009 at which analysts from TEPPC and OATI will present their findings and discuss them with affected stakeholders.

Question 6. Why did EIA stop collecting transmission data from public power, cooperatives, and federal utilities in recent years? Won't this leave a significant gap in the data?

Answer. EIA collected transmission data for approximately 500 publicly-owned utilities (mainly municipals and Federal utilities such as the Tennessee Valley Authority) on the Form EIA-412, Annual Electric Industry Financial Report, from 1980 through 2004. These data included accounting information such as electric balance sheets, income statements, sales of electricity for resale, electric operations and maintenance expenses, and purchased power and power exchanges, as well as information on the existing and projected transmission system.

EIA terminated its collection of public power and Federal utility transmission data in 2004. The decision reflected EIA's need to prioritize its budget in light of new requirements for data collection activities related to other domestic energy markets, notably the need for the better data on natural gas production and renewable fuels. This decision created a gap in the data, when measured in transmission line-miles, equal to about 20 percent of the total transmission system.

EIA did not collect data from cooperatives. Some of that data is collected by the Rural Utilities Service (RUS) from electric cooperatives participating in RUS lending programs. Once their financial obligations to RUS are satisfied in full, however, cooperatives are no longer required to file with RUS, although some are required to file some line-specific transmission data with the Federal Energy Regulatory Commission, through its FERC Form-1 ("Annual Electric Utility Report").

Question 7. Do you agree that if you "love renewables" you cannot "hate transmission"?

Answer. In broad terms, the Department agrees with this statement. Large fractions of the Nation's most economically attractive potential wind, solar, geothermal, and hydro-kinetic resources are located in geographic areas that are distant from urban centers and where existing transmission capacity is very limited or non-existent. Despite their distant locations, these are the renewable resources that appear most likely to make major contributions over the next two decades or so to meeting urban electricity demand. Development of this capacity to any significant extent will be infeasible without associated transmission development.

However there are uncertainties about the likely long-term contributions from photovoltaic systems, small-scale wind generators, etc. installed on or near urban consumers' premises. Large-scale development of such systems would presumably reduce the need for electricity supplies from distant sources via transmission.

RESPONSE OF KEVIN M. KOLEVAR TO QUESTION FROM SENATOR MENENDEZ

Question 1. During questioning from Senator Menendez, Assistant Secretary Kolevar stated he would provide the Committee with a written explanation of the Department's consideration of "alternatives" in the determination to designate two National Interest Electric Transmission Corridors in October 2007.

Answer. In its National Electric Transmission Congestion Report and Order (72 FR 56992, Oct. 5, 2007), the Department addressed the requirement in FPA section 216(a)(2) that calls for the Secretary to consider “alternatives and recommendations from interested parties” before making a National Corridor designation.

The Department concluded that, given the overall statutory framework, the term “alternatives” in section 216(a)(2) was intended to refer to comments suggesting National Corridor designations for different congestion or constraint problems, comments suggesting alternative boundaries for specific National Corridors, and comments suggesting that the Department refrain from designating a National Corridor. A detailed discussion of the Department’s reasoning for this interpretation can be found in the Report and Order at 72 FR 57010. This specific text is on the attached sheet. Although this discussion is in response to comments on the designation of the Mid-Atlantic Area National Corridor, the Department also applies this reasoning when responding to comments on the designation of the Southwest Area National Corridor at 72 FR 57018.

ATTACHMENT.—STATE AND LOCAL GOVERNMENT CONSULTATIONS

Governors/States: The project team engaged states and state agencies in the early process

- Two states Cooperating Agencies (CA, WY)
- Early contact (2005/2006) with all governors; meetings, briefings, phone
- Consultation throughout; meetings with state agencies, staffs
- Outreach during the comment period on the Draft Programmatic Environmental Impact Statement (PEIS) with in-person consultation as state officials desired
- Comments on draft from every state with multiple state agencies often responding

County and Local Government:

- Fall 2005: Template letter to Bureau of Land Management (BLM) State Directors, to invite Counties and others to engage as Cooperating Agencies
- National Association of Counties (NACo)
 - Outreach through NACo via BLM’s NACo coordinator throughout process
 - Fall 2007: Outreach through NACo to notice counties on up-coming release of draft and invitation to comment
 - Winter 2008: Update to NACo meeting in Washington D.C.
- Four counties as Cooperating Agencies
- Intensive siting work with counties in areas of concern (e.g. Clark County, Nevada; Millard County, Utah; San Miguel County, Colorado)

Resource Advisory Councils (RACs): RACs include local governments and other constituents. BLM and U.S. Forest Service field staff meet with RACs regularly to provide updates on agency business; briefings on the PEIS were a normal part of business.

- Fall 2007: Outreach notification through BLM national RAC coordinator to alert RACs and RAC coordinators of up-coming release of the Draft PEIS and opportunities to comment, including local hearings in all 11 states.

APPENDIX II

Additional Material Submitted for the Record

STATE OF NEW YORK,
DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
Albany, NY, August 8, 2008.

Hon. JEFF BINGAMAN,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, SD-304 Dirksen Senate Office Bldg, Washington, DC.

Hon. PETE V. DOMENICI,
Ranking Minority Member, Committee on Energy and Natural Resources, U.S. Senate, SD-304 Dirksen Senate Office Bldg, Washington, DC.

DEAR SENATORS BINGAMAN AND DOMENICI: On July 31, 2008, the Senate Energy and Natural Resources Committee (Committee) held a hearing on the state of the nation's transmission grid and the implementation of the 2005 Energy Policy Act's ("EPAct") transmission provisions. As part of this hearing, the Committee is providing interested persons with an opportunity to submit written testimony.

I appreciate the Committee's willingness to hear New York's concerns with respect to the National Interest Electric Transmission Corridors authorized under Section 1221 of the Energy Policy Act of 2005 and, on behalf of the New York State Department of Environmental Conservation (NYSDEC), I submit the following testimony for the hearing record. I am also enclosing the comments that NYSDEC submitted to the United States Department of Energy (DOE) in connection with the designation of the Mid Atlantic National Interest Electric Transmission Corridor (Docket No. 2007-0E-01) for the Committee's information and for inclusion in the hearing record.*

INTRODUCTION

NYSDEC is responsible for conserving, improving and protecting New York's natural resources and environment, and preventing, abating and controlling water, land, and air pollution to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being. Forty-seven counties, or nearly two-thirds of the state, are included within the recently designated Mid Atlantic National Interest Electric Transmission Corridor (MA NIETC). These areas could be subjected to drastic and irreversible changes to the environment and natural resources as a result of the implementation of EPAct and the siting of long-haul transmission lines.

As discussed below, the implementation of EPAct thus far has proved problematic on many levels. It has not proceeded in a manner that instills confidence in me that New York's concerns are and will be accorded due consideration by DOE. NYSDEC has a vested interest in the development of our nation's energy policy and ensuring that its implementation is protective of our environment and natural resources. The purpose of my testimony is to highlight those issues that are especially important to New Yorkers. I thank the Committee for the opportunity to discuss these issues and respectfully request that the Committee initiate appropriate action to address our legitimate concerns.

DISCUSSION

NEPA

Decision-making by federal agencies, particularly in connection with major federal actions, should be guided by the goals and objectives of the National Environmental Policy Act ("NEPA"). Unfortunately, DOE's implementation of EPAct falls well short

*Document has been retained in committee files.

of meeting NEPA's most basic requirements and frustrates the legislative goals Congress set out to achieve in NEPA.

NEPA was enacted to ensure that agency decision-makers use all practical means to improve and coordinate Federal actions with environmental principles. The goals of NEPA are simple but far reaching: to ensure that the Federal government is a trustee of the environment for future generations, that all Americans enjoy safe, healthy, productive and aesthetically and culturally pleasing surroundings, that the environment be enjoyed to its fullest extent without degradation, that our national heritage be preserved, and that our environment be maintained in a manner which supports diversity and a variety of individual choices. New York's State Environmental Quality Review Act is patterned after NEPA and espouses a similar mandate.

There is no doubt that the MA NIETC designation has the clear potential to significantly affect the quality of the human environment and that DOE, acting responsibly, should have prepared an Environmental Impact Statement. Long haul transmission lines require significant amounts of land and the clearing and potential blasting of hundreds (even thousands) of acres of vegetation and fragile habitat for construction and access. Indeed, that portion of the MA NIETC located in New York encompasses portions of the Adirondack and Catskill parks, pristine forested wetlands, protected streams, state forest lands and reforestation areas, wildlife management areas, wild and scenic rivers, agricultural resources, historical and cultural resources, and known habitat for threatened and endangered species.

Here, DOE failed to take the preliminary, but necessary, step of preparing an environmental assessment to document the potential for significant adverse impacts to human health and the environment. DOE further failed to properly articulate, as required by NEPA, that the NIETC designations would have no significant impact.

NYSDEC's comments to DOE in connection with the MA NIETC raised these issues and asked DOE to undertake an Environmental Impact Study to fully evaluate the potential impacts of the MA NIETC designation. DOE declined to do so, instead proceeding with the MA NIETC designation on an incomplete and inadequate administrative record. As you know, proceeding with a program of such extensive scope and significance, without an appropriately documented public environmental record, would constitute a fundamental flaw. The NIETC designation must be halted until a proper administrative review has been conducted.

Usurpation of State Authority

EPAAct represents a fundamental shift in the balance of power between the Federal government and the States. Prior to the EPAAct, or in the absence of a Federal National Corridor designation, transmission line siting was and remains a matter almost entirely within the purview of the States, who could review proposed projects in accordance with State law and policy and companion FERC regulations, unfettered by Federal constraints. EPAAct jeopardizes the review process in New York State in several respects.

Under New York State Public Service Law, the New York State Public Service Commission, which has jurisdiction over the siting of major gas and electric transmission facilities, must uphold the State's environmental laws. At this point, there is no clear indication whether the Federal Energy Regulatory Commission (FERC) will do the same.

EPAAct places time constraints on and erodes State review in National Corridor areas. States must complete their review within a year or potentially cede their role to FERC. New York's experience demonstrates that large-scale transmission projects often require more time for a meaningful and comprehensive assessment of public need and environmental compatibility. We should not be forced to accept projects that do not meet these objectives, or relinquish otherwise valid jurisdiction merely to satisfy fast-track time frames.

As a result of the MA NIETC designation, the Federal government is positioned to override the authority of eight States and the District of Columbia in the interest of furthering a Federal policy of siting more transmission facilities even if additional transmission capacity or a particular project is not in the State's best interest. Additional safeguards must be enacted to ensure that State concerns are taken into account in Federal decision-making.

A Sound National Energy Policy

EPAAct underscores the need to develop and implement a comprehensive national energy policy that promotes energy conservation and the use of renewable energy resources, reduces reliance on fossil fuel based power generation, particularly from high greenhouse gas emitting sources, and provides incentives to ensure those goals

are achieved. EAct's aggressive encouragement of transmission line siting frustrates these objectives.

As the New York Public Service Commission stated in its comments to DOE, the designation of a NIETC favors transmission solutions to the problem of grid congestion and will inevitably lead to the siting of long-haul transmission projects that move power from remote generating sources in upstate New York to load centers in downstate areas. In its response to comments DOE acknowledged that the MA NIETC is intended to facilitate the transmission of lower-cost energy from the western part of the State into congested downstate areas and to increase the diversity of fuel, including coal, used in the production of electricity.

Coal-fired energy sources, however, have higher emissions and, due to their age, are often subject to less regulation than other sources. Expanding the use of these energy sources in New York State is not compatible with the State's goals of maintaining and improving air quality, improving the health of its citizens, and reducing greenhouse gas emissions. By design, EAct promotes transmission line development. What is missing in this effort is a framework for the Federal government to consider State energy and environmental policy objectives, which are likely to be overlooked in the Federal siting process.

CONCLUSION

In conclusion, EAct has proven problematic on many levels, both as to its nature and its scope, and is in need of amendment. From a policy perspective, EAct clearly focuses too much attention on transmission development to the exclusion of other strategies to meet our nation's energy needs. From the standpoint of implementation, EAct vests too much authority in the Federal government to the exclusion of legitimate State concerns, including whether transmission line development is the best solution to address our energy needs and is compatible with the environment and serves the public need.

New York stands to be directly and significantly impacted by EAct and its citizens deserve to be heard on the issues I raise to the Committee. Thank you for the opportunity to present our concerns and I look forward to working with you to address them.

Sincerely,

ALEXANDER B. GRANNIS,
Commissioner.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY GENERAL,
New York, NY, September 5, 2008.

Hon. JEFF BINGAMAN,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, SD-304 Dirksen Senate Office Bldg, Washington, DC.

Hon. PETE V. DOMENICI,
Ranking Minority Member, Committee on Energy and Natural Resources, U.S. Senate, SD-304 Dirksen Senate Office Bldg, Washington, DC.

DEAR SENATORS BINGAMAN AND DOMENICI: Thank you for the opportunity to submit written testimony to supplement the record of the July 31, 2008 Senate Energy and Natural Resources Committee ("Committee") hearing on the implementation of the 2005 Energy Policy Act's ("EAct") provisions with respect to electric transmission lines.

INTRODUCTION

I have many serious concerns with respect to the National Interest Electric Transmission Corridors ("NIETC") authorized under Section 1221 of the Energy Policy Act of 2005, and in particular, the U.S. Department of Energy's ("DOE") designation of the Mid Atlantic National Interest Electric Transmission Corridor, which includes 47 counties in across New York. This designation, if upheld by the courts, could facilitate the siting of the proposed New York Regional Interconnect ("NYRI") transmission line, which would run from Utica to Orange County, extending nearly 200 miles through 43 towns and cities in New York.

As proposed, the NYRI transmission line will run through several State parks, forestland, and historic sites, protected wetlands and streams, and the habitat of endangered and threatened species. The project also intends to utilize the eminent domain powers granted to public utilities under the Transportation Corporations Law to site transmission lines and towers. Because of these and other issues, including

economic concerns about the project's impact on private property and electric rates, area municipalities, residents and businesses have expressed grave opposition to this proposed project.

DOE's NIETC designation would give the Federal Energy Regulatory Commission ("FERC") "backstop" siting authority with respect to the proposed NYRI line, as well as the power to preempt New York's traditional approval authority over the siting of transmission lines if New York does not act within a specified time frame. Because of both my concerns about usurpation of state authority by the federal government and the concerns raised by many New Yorkers about the potential adverse environmental and economic impacts of the proposed NYRI line, my office has challenged DOE's Corridor designation in federal court. I have also filed extensive comments with both DOE and FERC in their administrative proceedings concerning the Corridor designation and the implementation of EPAct. For the Committee's convenience, my office's comments are enclosed.

DOE's October 2007 National Interest Electric Transmission Corridor Order ("Designation Order"), ostensibly issued pursuant to its authority under Section 216(b) of EPAct, is fatally flawed from both a legal and policy perspective. DOE exceeded the specific and limited statutory authority granted by Congress under EPAct, and has violated established administrative and environmental laws in the process. Congress should revisit EPAct in order to limit the excesses of DOE, especially where the agencies' actions threaten State regulatory authority and sovereignty and are tainted with industry favoritism.

MECHANICS OF EPACT'S RELEVANT SECTIONS

EPAct § 216(b) changed the traditional State police powers related to siting and approval of energy transmission lines. Section 216(a) provides that within one year of EPAct's passage, and every three years thereafter, DOE shall conduct a study of electric transmission congestion ("Congestion Study") in consultation with affected states. 16 U.S.C. § 824p(a). Section 216(a) further provides that after considering alternatives and providing an opportunity for public comment, DOE shall issue a report based on the Congestion Study that may designate as a NIETC any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers. *Id.* After DOE's designation of a Corridor, Section 216(a) provides that FERC may then assert federal siting and permitting jurisdiction over electric transmission projects located within the Corridor under certain circumstances, including if a state fails to act on a project application within one year. FERC may authorize the construction and operation of transmission facilities, which may include the exercise of eminent domain, even if such projects are located wholly within a state. See *Id.* § 824p(b).

DOE HAS VIOLATED ADMINISTRATIVE AND ENVIRONMENTAL LAWS

As my office has pointed out to DOE, the agency's administrative review process leading up to the designation exceeded its authority under Section 216. At the same time, DOE violated long-standing federal laws.

The Administrative Procedure Act ("APA"), 5 U.S.C. §§ 553, 554, 556 and 557, prescribes the procedural requirements that must be followed by federal agencies in the issuance of regulations and adjudicatory orders. The APA requires a formal administrative process for the type of factual findings and rulemaking imposed by DOE.

The National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4331, *et seq.*, sets forth the policy of the United States to protect the environment and prescribes the procedural and substantive requirements that each federal agency must follow when taking any action, including those involving the issuance of an order or the promulgation of a regulation.

The Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531, *et seq.*, provides for the protection of endangered and threatened species. In so doing, it requires that each federal agency undertaking an action, including issuance of an order or promulgation of a regulation, consult with other federal agencies having jurisdiction to insure that the action is not likely to jeopardize the continued existence of any species.

Finally, the National Heritage Act ("NHA"), 16 U.S.C. § 461, *et seq.*, designates areas of New York State as National Heritage Areas, three of which are directly affected by DOE's Designation Order: 1) the Hudson River Valley National Heritage Area, a three million-acre area in New York's Hudson River Valley; 2) the Erie Canalway National Heritage Area; and 3) the Champlain Valley National Heritage Partnership. The designation of National Heritage Areas requires preparation of a resource-protective Management Plan, and that any federal agency conducting or supporting an activity that may affect the designated area consult with the Depart-

ment of Interior and State entities to evaluate alternatives to the proposed action and consistency with the Management Plan.

DOE essentially disregarded and marginalized the mandatory procedural and planning requirements imposed by Congress in each of these statutes to the detriment of the States, as well as its own credibility and authority.

DOE DISREGARDED SUBSTANTIAL STATE AND PUBLIC INPUT DURING THE DESIGNATION OF THE NIETC

In August 2006, DOE issued its “National Electric Transmission Congestion Study,” which proposed to designate a massive geographic area in New York and several other States as an area purportedly “experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers” within the meaning of F.P.A. Section 216(a). 71 Fed. Reg. 45,047 (2006). Comments from the State of New York, including the New York Public Service Commission, the New York State Department of Environmental Conservation, and the Governor asserted:

1) the Congestion Study underlying the proposed Corridors was flawed:

—there were unexplained discrepancies between the data utilized in the Congestion Study and prior findings of the New York Independent System Operator (“NYISO”);

—inconsistent methodologies utilized in the Congestion Study skewed its results to favor an unreasonably broad Corridor designation.

2) any action designating a NIETC required consultation with states and other federal agencies, and extensive environmental review:

—the inclusion of 47 counties in New York would have adverse environmental impacts on numerous protected natural, cultural and historic resources, as well as the State’s economic resources and energy policy;

—technical consultation with the State and additional studies were necessary prior to DOE’s designation of a NIETC in New York;

—the Study failed to consider and analyze alternatives such as new generation and transmission upgrades;

—the Study failed to consider new and proposed generation projects that could be more cost effective than transmission lines;

—the Study failed to consider adverse economic impacts on energy markets from the Corridor designation; and

—DOE, failed to comply with NEPA, ESA, and -NHA in designating the Corridor, which represented the first step to implementation of a federal program for the development of transmission lines in the State.

3) DOE inclusion of New York in any NIETC was unwarranted:

—DOE’s action usurped traditional State authority and imposed aging, dirty power sources on New York; and

—there is no need for federal jurisdiction, and New York should be excluded from the Corridor because New York has an effective transmission facility siting law, Public Service Law, Article VII, and has taken steps to foster reliability.

DOE conducted a limited number of public information hearings on the proposed Corridor designations at which interested stakeholders submitted hundreds of comments to DOE expressing widespread opposition to the proposed Corridor Designation Report.

In October 2007, DOE issued a final order designating two NIET Corridors exactly as it had proposed them (Designation Order), one in the Mid-Atlantic Corridor and the other in the Southwestern Area. 72 Fed. Reg. 56,992 (2007). The Mid-Atlantic Corridor included 47 counties in upstate New York, large portions of Pennsylvania, Ohio, Virginia and West Virginia, and all of New Jersey, Delaware, Maryland, the District of Columbia. My office sought reconsideration of the Designation Order, which was granted, but DOE then issued a final rule to the same affect in March 2008. My office then challenged the rule. This challenge, together with those brought by other states and entities, are now pending before the U.S. Court of Appeals for the Ninth Circuit.

THE DESIGNATION OF THE NIETC IS LEGALLY FLAWED

a) DOE exceeded its statutory authority

In Section 216(a), Congress did not provide DOE with the authority to issue an adjudicatory order or rule like the Designation Order issued here. The Designation

Order is binding on affected states and makes factual findings related to congestion and adverse impacts on consumers. As explained in filings with the DOE, and in subsequent court documents, DOE has discretion to perform regulatory functions pursuant to Section 309. *Niagara Mohawk Power Corporation v. Federal Power Commission*, 379 F.2d 153, 159 (D.C. Cir. 1967). However, the fact-finding, which underlies the Designation Order, coupled with its binding affect on the states, is functionally an adjudication. As such, it may not be “informal” as DOE claims. See 72 Fed. Reg. at 57,001 (2007). In passing Section 216(a), Congress did not direct DOE to adjudicate anything, nor did it allow DOE to unilaterally abrogate the APA’s adjudicatory hearing and due process requirements. See 5U U.S.C. §§ 554, 556-557 (1966). Had Congress intended to give DOE the authority under the APA to issue either an adjudicatory order containing factual findings or a rulemaking, both of which would bind the States for a period of 12 years, it would have expressly stated as much in Section 216. Thus, the Designation Order is beyond DOE’s authority under Section 216 and violates the procedural requirements of the APA.

b) The Designation Order is fundamentally flawed

DOE’s Designation Order relies heavily upon its 2006 Congestion Study, which fails to meet the statutory criteria for designation in Section 216(a)(2). In order to designate a NIETC, DOE must find that a geographic area is experiencing electric energy transmission capacity constraints or congestion. Second, those constraints or congestion must be adversely affecting consumers in those areas. § 824p(a). DOE must find both criteria met before including a geographic area as part of a NIETC. *Id.* DOE’s Designation Order purports to make factual findings of capacity constraints and adverse affects on consumers, but lacks proper support in the record for those findings.

DOE has included parts of New York in the Corridor that are simply not currently congested. Indeed, DOE included areas in the Mid-Atlantic Corridor that may have congestion less than five percent of the time, the threshold set forth in the Designation Order. 72 Fed. Reg. at 57,005 (2007). The magnitude of DOE’s error is illustrated by the sheer size of the geographic area included within the Corridor that encompasses some of the least populated and least congested counties in New York.

While DOE claims that the boundaries of the Corridor “are not based on any proposed transmission project,” *Id.* at 56,999 (2007), an objective review demonstrates that such is not the case. Well before DOE issued the Congestion Study, at least one New York transmission line developer requested that DOE designate a specific and extensive area as part of the Corridor. In a March 6, 2006 letter, the New York Regional Interconnect, Inc. (“NYRI”) requested that DOE designate approximately 190 miles as a transmission Corridor, running from the Edic substation in the Town of Marcy, Oneida County, to the Rock Tavern substation in New Windsor, Orange County, just outside the New York City metropolitan area. With apparently no information related to actual adverse impacts on consumers in that 190-mile area, DOE simply incorporated NYRI’s requested designation in the Congestion Report, *Id.* at 25,838, 25,860 (2007), clearing the way for the exercise of FERC jurisdiction—and likely approval—of the project if the State does not act on the project within one year of the application. § 824p(b). Furthermore, it is not clear that the NYRI project, as proposed, will actually relieve congestion in the areas of New York with the most significant congestion. The efficacy of the NYRI project remains at best a significant open question that will be resolved by the New York State Public Service Commission (“NYSPSC”), should the NYRI application be deemed complete and sufficient for review.

The Designation Order summarily claims that because there may be congestion as little as five percent of the time, consumers are adversely impacted. 72 Fed.Reg. at 57,005 (2007). There simply is no evidence in the record that all consumers throughout the massive geographic area designated as the Mid-Atlantic Corridor are adversely impacted. DOE merely speculates and theorizes that congestion must cause adverse impacts. *Id.* at 57,007. DOE’s result-oriented speculation is insufficient to support DOE’s finding that such an enormous geographic area is both constrained and adversely affected. Section 216(a) requires a finding of adverse impact, not speculation, in order for a geographic area to be designated as part of the Corridor.

DOE’s use of the overbroad “source and sink” approach is contrary to the express language of Section 216(a), which directs DOE to include in the Corridor only those geographic areas found to be experiencing constraints that adversely affect consumers in the retail consumer end markets or “sinks” of congestion. 16 U.S.C. § 824p(a)(2) and (a)(4)(A). Included within the Corridor are both the “sources” of electric power generation and the “sinks” representing the end-use consumers that pre-

sumably are constrained and affected. The inclusion of “sources” and all the areas in between is simply not authorized by Section 216(a). Invoking the statute’s supposed “ambiguity,” DOE has gone well beyond the scope of authority granted by Congress and seeks to insulate its overreaching abuse of regulatory discretion from more probing judicial review under *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). The language of Section 216(a) is not ambiguous and focuses on consumers, not on power generators. See *New England Power Company v. Federal Power Commission*, 467 F. 2d 425, 429 (D.C. Cir. 1972), *aff’d sub nom*, 415 U.S. 345 (1974) (FPC’s purpose in regulation of power is to benefit the public and there is “something fundamentally wrong” in regulating to benefit the industry).

The Designation Order is factually flawed and does not make credible or supportable findings of fact on transmission congestion and related adverse impact on consumers. To justify the Designation, DOE adopted wholesale the data and report of its consultants, CRA International, Inc. DOE did not question CRA’s report, despite the specific factual and technical objections to the Congestion Report asserted by numerous commentators, including the NYSPSC, that called the Report into question.¹ It is clear that DOE failed to conduct any independent verification of the information on which it relied, nor did the agency adequately address the apparent conflicts and inconsistencies within the Designation Order.

DOE’s approach fails to consider relevant economic factors, including whether new transmission will cost consumers more. This approach is entirely inconsistent with objectives of the Federal Power Act, which is designed to favor the consumer. New York is keenly aware of its own energy needs and is in the best position to determine a State energy policy after balancing a number of relevant factors. The Designation Order improperly encroaches on the State’s right to determine and implement a balanced energy policy with appropriate solutions to energy needs, including those related to congestion.

Section 216(a) required DOE to formally consult with affected states in the proposed designated Corridor. § 824p(a). When Congress included the consultation requirement in Section 216(a), it intended a far more meaningful role for the states in the Corridor designation process than the limited one that DOE has afforded. Rather than undertake a formal consultation process in which the states could pursue a dialogue about the Corridor, DOE relied on informal communications with affected States in which no real dialogue or substantive consideration of issues took place. Moreover, DOE disregarded the positions offered by affected states, including New York, in their comments submitted in opposition to both the Congestion Study and the Corridor designation. For example, DOE entirely ignored the NYISO conclusion that there is no need for a Corridor designation from a reliability standpoint. 72 Fed. Reg. at 25,858–25,860 (2007).² Indeed, DOE never changed its position throughout the Corridor review and designation process on any issue as a result of a state’s comments. This is not “consultation” within the meaning or intent of Section 216(a).

DOE’s 2006 Congestion Report, which purported to make the requisite congestion and consumer cost findings which EPAct required before designation could occur, is based in large part on a private study compiled by CRA International, a consulting engineering firm used by the power industry, including but not limited to New York Regional Interconnect, an entity seeking to site a 190-mile long transmission line in upstate New York. As we have come to find out, the CRA Report was neither scientific nor reliable and served in large part to parrot the “wants” of the industry, as opposed to the actual needs and circumstances on the ground. DOE failed to objectively review the CRA report, failed to consider well-founded comments critical of the assumptions and conclusions of the CRA report, based its designation on the CRA report, and then—remarkably—has refused to provide that report to the public, as required by the Freedom of Information Act, claiming that it is “confidential business information.” The fact that NYRI’s planned transmission line was included in the NIETC is hardly a coincidence and evidences the taint in the study and the DOE designation process.

c) DOE’s administrative process leading to the Designation Order was deficient

DOE failed to comply with both the procedural framework of Section 216(a) prior to issuing the Designation Order and the basic, long-standing requirements of the APA. Additionally, DOE chose to view its Designation Order as a benign administrative undertaking that had no real effects, creating a fiction that allowed it to

¹ See NYSPSC’s October 2006 Comments related to the Congestion Report.

² NYISO’s Reliability Needs Assessment states that “there is no need for a National Corridor [in New York] from a reliability standpoint.”

sidestep its duties under NEPA, ESA and NHA. Respectfully, Congress did not intend that DOE disregard the established and protective environmental safeguards in furthering energy reliability under EPAct.

DOE characterizes the requirement in EPAct Section 216(a) as “ambiguous” that they consider alternatives to designation of NIETCs, 72 Fed.Reg. at 57,010 (2007), again in a veiled attempt to insulate its actions under Chevron. DOE resorts to fictional “ambiguity” to avoid proper review, including the “alternatives,” under NEPA, which was clearly not the result intended by Congress. See 42 U.S.C. § 4332(2)(C)(iii) (all agencies of the Federal Government shall ... include ... a detailed statement by the responsible official on ... alternatives to the proposed action...). In fact, Section 216 requires DOE to consider alternatives to the size and location of the Corridor and to review other solutions to capacity constraints, other than new transmission lines, such as transmission line upgrades, local distribution, new generation, and other technologies. § 824p(a). In refusing to consider and evaluate alternatives, particularly to this clearly major federal action, DOE has failed to comply with the letter and spirit of both Section 216(a) and NEPA. See also Letter from Commissioner Alexander Grannis of the Department of Environmental Conservation, to Senators Bingaman and Domenici of the United States Senate (August 13, 2008).

DOE attempts to justify its finding that the Designation Order is not a “major federal action” by stating that the Corridor designation has no environmental impact and that should specific transmission projects be proposed in the future, FERC will review the environmental impacts of those projects under NEPA. 72 Fed. Reg. at 57,021-23 (2007). DOE ignores the continuing nature of Section 216’s scheme to develop transmission in the Corridor. § 824p(a) and (b). In addition to ignoring its own NEPA obligations, DOE disregards the anticipated development of transmission lines expected as a result of the Designation Order and the unavoidable cumulative environmental impacts that flow from that development. The Designation Order states that it is “the first step in the process of determining whether to provide a potential Federal forum that would examine whether addressing congestion through transmission expansion is in the public interest.” 72 Fed.Reg. at 57,004 (2007).³

Just as DOE violated NEPA, it wholly disregarded its duties to undertake a formal consultation with other federal agencies and the states imposed by Congress under ESA and NHA when it issued its Designation Order. See Endangered Species Act, 16 U.S.C. § 1536(a)(3); 50 C.F.R. §§ 402.10-402.16; National Heritage Act, 16 U.S.C. § 461, et seq.⁴ (Hudson River Valley National Heritage Area, Erie Canalway National Heritage Area and the Champlain Valley National Heritage Partnership included in the Designation Order).

CONCLUSION

DOE’s Designation Order establishing the Mid-Atlantic NIETC exceeds its statutory authority under Section 216 of EPAct. The Designation Order is itself factually flawed, in that it does not make the required findings of actionable congestion and consumer impacts. To the extent that it purports to make such findings, they are unsupported by the record, as evidenced by DOE’s reliance upon the tainted CRA Congestion Study Report. Finally, DOE’s administrative process in reaching its Designation Order failed to comply with applicable federal laws and did not meaningfully involve the states. While this office is seeking to address these deficiencies in the courts, it is critical that Congress revisit EPAct, review DOE’s actions and expressly direct a process which complies with established law in order to achieve the desired result of energy reliability and consumer and environmental protection.

Thank you again for the opportunity to present this testimony on behalf of the people of the State of New York.

Respectfully Submitted,

ANDREW M. CUOMO,
Attorney General.

³Similarly, in the Congestion Report, DOE characterizes the Designation Order as a “necessary first step” in siting transmission lines in the Corridor. See DOE “National Electric Transmission Congestion Report and Final National Corridor Designations, Frequently Asked Questions,” p.1, § 2 (October 2, 2007).

⁴Pub. No. 105-83, Title III, §§ 317 and 324, 111 Stat 1595, 1597 (1997); Pub. L. No. 106-176, § 206, 114 Stat. 23 (2000). See NYSDEC November 2, 2007 Petition for Rehearing, pp 16-17; 20-22.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY GENERAL,
Albany, NY, January 31, 2008.

Office of Electricity Delivery and Energy Reliability, OE-20, U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC.

RE: National Interest Electric Transmission Corridor Designation Order, Mid-Atlantic Area (Docket No. 2007-OE-01)

DEAR SIR OR MADAME: Please accept this letter as a supplement to the New York Attorney General's November 5, 2007 Petition for Rehearing and Motion to Intervene filed in the above captioned proceeding. This supplement is necessitated because we believe that the facts set forth below should be considered by the Department of Energy ("DOE") in the context of rehearing this matter.

In a March 6, 2006 letter to DOE, transmission line developer New York Regional Interconnect, Inc. ("NYRI") requested that DOE designate a 200 mile long area from the Town of Marcy to the Town of New Windsor, New York, as part of the Mid-Atlantic Corridor (Exhibit A). NYRI requested "early" designation of its project area in the Corridor. Although DOE did not designate NYRI's project early in the process, the entire project area was later included in DOE's Corridor designation, as NYRI had requested (See August 2006 National Electric Transmission Congestion Study, pp. 39-41 and Figure 5-1).

In May 2006, NYRI submitted documents to the New York State Public Service Commission ("PSC") reflecting its intention to develop the 200 mile long transmission project in New York. On February 1, 2007, NYRI brought an action against certain State officials in the United States District Court for the Northern District of New York challenging the constitutionality of the New York Transportation Corporation Law insofar as it relates to the transmission project. (See NYRI v. Pataki, Civil Action No. 07-0122). The State moved to dismiss the NYRI complaint on various grounds. In opposition to the State's motion, NYRI submitted a September 5, 2007 expert report prepared by James H. Drzemiecki of CRA International ("CRA") (Exhibit B). On November 8, 2007, the court dismissed NYRI's complaint. Nevertheless, it is clear that at some point, NYRI retained CRA as its expert in litigation related to its transmission project.

On December 10, 2007, NYRI submitted to the PSC a petition for a declaratory ruling that the same State law challenged in the dismissed federal court action was either not applicable to NYRI or was unconstitutional (Exhibit C). In support of its petition, NYRI submitted the same CRA expert report that had been submitted in the federal court action.¹

On January 8, 2007, NYRI and representatives of CRA met with representatives from the New York State Department of Public Service and Department of Environmental Conservation to discuss NYRI's proposed transmission project in New York. CRA vice president Aleksandr Rudkevich and CRA associate T. Bruce Tsuchida attended that meeting. It is therefore clear that NYRI has also retained CRA as its consultants in matters before the PSC related to its transmission project.

Notably, both Mr. Rudkevich and Mr. Tsuchida were members of the CRA Project Team that DOE retained to draft the July 2006 Report "Congestion Analysis of the Eastern Interconnection" (Exhibit C: "Congestion Analysis, Task 2: Eastern Interconnection Modeling," p. 1). The Congestion Analysis Report was prepared by CRA for DOE, as was the bulk the August 2006 Congestion Study Report.² CRA's Congestion Analysis appears to assume that NYRI's proposed project will be built and will constitute new generation in New York (Exhibit C, Congestion Analysis, Task 2, p. 12). Both Reports form the primary basis for DOE's October 5, 2007 order designating the Mid-Atlantic Corridor ("Designation Order"), which includes all of NYRI's proposed project area.

NYRI's retention of CRA as its consultants raises questions about the independence of the work performed for DOE. NYRI stands to benefit from the CRA's work on the Congestion Study and from the wholesale inclusion of its proposed project area as part of the Corridor. Moreover, because we believe that the inclusion of the entire NYRI project in the Corridor lacks the requisite proof of congestion that adversely impacts consumers, DOE's designation of that portion of the Corridor in New York is unsupported and therefore in error.

DOE's regulations governing the retention of consultants defines a conflict of interest to mean "that because of other activities or relationships with other persons,

¹ The report was authored by James H. Drzemiecki, a vice president of CRA.

² The Congestion Analysis and Congestion Study were prepared by CRA and DOE pursuant to Section 216 of the Energy Policy Act of 2005 in order to designate the Mid-Atlantic Corridor.

a person is unable or potentially unable to render impartial assistance or advice to the Government, or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage." 9 C.F.R. § 952.209-8(a). These regulations have disclosure requirements and provide that a successful bidder such as CRA submit a statement to DOE disclosing "any past (within the past twelve months), present, or currently planned financial, contractual, organizational, or other interests relating to the performance of the statement of work," along with an identification of the client and the services rendered. 9 C.F.R. § 952.209-8(c)(1). Sufficient information must be provided by the contractor to DOE in order "to allow a meaningful evaluation of the potential effect" of the contractor's interests on the performance of the work to be performed for DOE. *Id.* A statement must also be submitted that no actual or potential conflict of interest or unfair competitive advantage exists with respect to the services to be provided to DOE. 9 C.F.R. § 952.209-8(c)(2).

The purpose of DOE's regulations is to ensure that the contractor (1) is not biased because of its financial, contractual, organizational, or other interests which relate to the work under the contract, and (2) does not obtain any unfair competitive advantage over other parties by virtue of its performance under the contract. See 9 C.F.R. § 952.209-72.

Under Section 515 of the Treasury and General Government Appropriations Act of 2001, federal agencies are required to draft policy and procedural guidelines that "provide for the quality, objectivity, utility and integrity of information disseminated to the public." Under both the Office of Management and Budget guidelines, (67 Fed. Reg. 8452), and the DOE guidelines, (67 Fed. Reg. 62,446), data and information on which DOE relies must be unbiased and capable of being substantially reproduced with respect to analytical results by a qualified individual outside of the agency. These guidelines apply to third party contractors who provide information relied upon or endorsed by DOE (67 Fed. Reg. At 62, 446).

In light of the foregoing, we request that DOE consider within the pending rehearing the question of CRA's compliance with 9 C.F.R. Part 952 and the OMB and DOE guidelines. In addition, we request that the Congestion Analysis and Congestion Study be subjected to independent peer review. CRA's relationship to NYRI and other transmission developers who will benefit from the assumptions and conclusions in the Congestion Analysis and Congestion Study, as well as from DOE's Mid-Atlantic Corridor designation, should be subject to further inquiry as part of the rehearing.

NEW YORK'S FREEDOM OF INFORMATION ACT REQUEST

In a December 17, 2007 e-mail to DOE, we requested the 2004 CRA Report "Grounded in Reality: Eastern Interconnection" pursuant to the Freedom of Information Act ("FOIA"), 5 U.S.C § 552. DOE reviewed this Report and included it in the Congestion Study as part of the administrative record before the agency when it issued the Designation Order (See Congestion Study, Appendix I). We therefore believe that this Report falls within the purview of FOIA. In the FOIA demand, we also requested DOE's disclosure of documents and communications between and among DOE, CRA and transmission developers, utilities, and other industry stakeholders. On January 28, 2008, our FOIA demand was repeated in an e-mail to DOE's FOIA office.

These documents are not available on DOE's web page, and apparently are not otherwise being made easily available to the public. The Attorney General's ability to fully understand the actions of DOE and its contractors during the corridor designation process has been hampered by DOE's failure to respond to the FOIA demand and make relevant information available. In the absence of prompt and full disclosure of the record documents before DOE when it issued the Designation Order, we have been prejudiced in fully protecting the State's rights in this proceeding.

As you are aware, the Attorney General's Office has already agreed to pay reasonable fees for disclosure. To date, DOE has not disclosed the requested records nor provided an estimate of the fees for disclosure. This is a violation of FOIA's requirement that DOE respond to a FOIA request within 20 days and that the records be disclosed promptly. We ask that DOE promptly provide an estimate of the cost of disclosure and immediately disclose the documents we have requested.

STAY OF CORRIDOR DESIGNATION ORDER

On December 4, 2007, DOE issued an order granting rehearing on the October 5, 2007 Corridor Designation Order. We understand from DOE staff that a ruling is expected within 90 to 120 days of the order granting rehearing (or by March 4

to April 4, 2008). We urge DOE to stay the Designation Order pending review of the issues set forth above as well as those in the rehearing petitions. As previously noted, NYRI has submitted documents to the New York PSC reflecting an intention to apply for approval of its proposed project. The statutory deadline in the Energy Policy Act that requires the PSC to address transmission project applications within one year—or face federal approval—cannot begin to run while these important issues about CRA and the Corridor designation remain outstanding and the rehearing proceeding remains open. A stay is therefore appropriate.

Should you have any questions regarding the foregoing, kindly feel free to telephone me.

Very truly yours,

MAUREEN F. LEARY,
Assistant Attorney General.

DEPARTMENT OF ENERGY

NATIONAL INTEREST ELECTRIC TRANSMISSION CORRIDOR, MID-ATLANTIC AREA

DOCKET NO. 2007-OE-01

PETITION FOR REHEARING BY THE STATE OF NEW YORK

Pursuant to the Federal Power Act (“FPA”) Section 313, 16 U.S.C. § 8251, the State of New York hereby petitions for rehearing of the October 5, 2007 Order designating the Mid-Atlantic Area National Interest Electric Transmission (“NIET”) Corridor (hereinafter “Designation Order”). For the reasons set forth below, rehearing should be granted and the Designation Order should be vacated.

A. NEW YORK’S INTEREST

New York’s interest in this proceeding is set above in its motion to intervene in this proceeding, and is incorporated here. See Attorney General’s November 5, 2007 Motion to Intervene.

B. APPLICABLE STATUTORY PROVISIONS

The FPA, as amended by the Energy Policy Act of 2005 (“EPAAct”), changed the balance of power between State and Federal jurisdiction in the field of energy transmission. FPA Section 216, 16 U.S.C. § 824p, creates a new scheme of federal regulation over traditionally-exercised State authority related to the siting and approval of electric transmission lines, including those located wholly within a State. Section 216(a) provides that within one year of EPAAct’s passage, and every three years thereafter, DOE shall conduct a study of electric transmission congestion (“Congestion Study”) in consultation with affected States. 16 U.S.C. § 824p(a). Section 216(a) further provides that after considering alternatives and providing an opportunity for public comment, DOE shall issue a report based on the Congestion Study that may designate as a NIET Corridor any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers. 16 U.S.C. § 824p(a).

Following DOE’s corridor designation, Section 216(a) provides that FERC then may assert federal siting and permitting jurisdiction over electric transmission projects located within the Corridor under certain circumstances, including if a State fails to act on a project application within one year. FERC may authorize the construction and operation of transmission facilities, even if such projects are located wholly within a State. See 16 U.S.C. § 824p(b).

The Administrative Procedure Act (“APA”), 5 U.S.C. § 553, 554, 556 and 557, prescribes the procedural requirements that must be followed by federal agencies in the issuance of regulations and adjudicatory orders. These procedures are mandatory and govern all federal actions.

The National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4331 et seq., sets forth the policy of the United States with respect to protection of the environment, and prescribes the procedural and substantive requirements that each federal agency must follow when taking any action, including those involving the issuance of an order or the promulgation of a regulation. These procedures are mandatory and govern all federal actions that may affect the environment. 42 U.S.C. § 4332.

The Endangered Species Act (“ESA”), 16 U.S.C. § 1531, et seq., sets forth the policy of the United States to protect endangered and threatened species, and requires that each federal agency undertaking an action, including those involving issuance of an order or promulgation of a regulation, consult with other federal agencies hav-

ing jurisdiction under the ESA to insure that the action is not likely to jeopardize the continued existence of any endangered or threatened species. The ESA's consultation requirement is mandatory and applies to all federal actions that may adversely impact protected species. 16 U.S.C. § 1536.

The Hudson River Valley National Heritage Area Act of 1996 ("HRVNHA"), Section 908, designates a three million-acre area in New York's Hudson River Valley as a National Heritage Area. The designation requires preparation of a Management Plan, which is designed to protect the natural, cultural, historic and recreational resources of the Area. Section 908 of the HRVNHA requires any federal agency conducting or supporting an activity that may affect the designated area to consult with the Department of Interior and certain other State entities with respect to the proposed activity, to evaluate alternatives, and to ensure that the activity is consistent with the Management Plan. The consultation requirement is mandatory and applies to all Federal activities affecting the HRVNHA. P.L. 104-333, Division II, § 908, 110 Stat. 4275 (1996).

C. BACKGROUND

In August 2006, DOE issued its "National Electric Transmission Congestion Study," which proposed to designate a massive geographic area in New York and several other States as an area purportedly "experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers" within the meaning of FPA Section 216(a). 71 Fed. Reg. 45,047 (August 8, 2006). DOE solicited comments on the Congestion Study from interested parties.

On October 6, 2006, the NYSPSC submitted comments on the Congestion Study, asserting that there were unexplained discrepancies between the data utilized in the Congestion Study and prior findings of the New York Independent System Operator ("NYISO"); that inconsistent methodologies utilized in the Study skewed its results to favor an unreasonably broad Corridor designation; that the Study failed to consider new and proposed generation projects that could be more cost effective than transmission lines; that the Study had failed to consider and analyze alternatives such as new generation and transmission upgrades; that the Study had not considered adverse economic impacts on energy markets from the Corridor designation; and that technical consultation with the State and additional studies were necessary prior to DOE's designation of a NIET Corridor in New York.

In May 2007, DOE issued a notice and opportunity to comment on the draft Corridor Designation Report that established two NIET Corridors, one in the Mid-Atlantic Area and the other in the Southwestern Area. 72 Fed. Reg. 25,838 (May 7, 2007). DOE conducted a limited number of public informational hearings on the proposed Corridor designations. Interested stakeholders submitted hundreds of comments to DOE expressing widespread opposition to the proposed Corridor Designation Report.

On June 8, 2007, New York Governor Eliot Spitzer submitted comments to DOE opposing the proposed designation on the grounds that there is no need for the designation or the exercise of federal jurisdiction because New York has an effective transmission facility siting law, Public Service Law, Article VII. The Governor recited the NYSPSC's efficient approval of numerous transmission projects under the State siting law and the efforts undertaken to improve reliability. The Governor urged DOE to exclude New York from the NIET Corridor.

On July 6, 2007, the NYSPSC submitted formal comments on the proposed Corridor Designation Report and also challenged the inclusion of New York in the proposed Mid-Atlantic Corridor. NYSPSC reiterated its earlier comments on the Congestion Study, disputed certain factual findings in the Report, challenged the legal basis of the Corridor Designation under FPA Section 216(a), asserted that the Designation is contrary to established economic principles, and confirmed New York's primary jurisdictional authority over the siting and construction of transmission lines.

On July 3, 2007, the NYSDEC submitted formal comments on the Corridor Designation Report, asserting that the inclusion of most of New York would have adverse environmental impacts on numerous protected natural, cultural and historic resources. The NYSDEC detailed the adverse impacts of the action on the State's economic resources and energy policy. The NYSDEC asserted that DOE's action usurped traditional State authority and promoted the use of aging, dirty power sources. The NYSDEC also asserted that DOE had failed to comply with NEPA in designating the Corridor, which represented the first step to implementation of a federal program for the development of transmission lines in the State. NYSDEC also asserted that DOE had failed to consult with appropriate agencies under the ESA.

In October 2007, DOE issued the final Order designating two NIET Corridors (“Designation Order”), one in the Mid-Atlantic Area and the other in the Southwestern Area. 72 Fed. Reg. 56,992 (October 5, 2007). The Mid-Atlantic Corridor includes 47 counties in New York, all of New Jersey, Delaware, Maryland, and the District of Columbia, and large portions of Pennsylvania, Ohio, Virginia and West Virginia.

Prior to issuing the Designation Order, DOE did not prepare or issue for public notice and comment an environmental assessment (“EA”) describing the proposed designation as required by its own NEPA regulations, 10 C.F.R. § 1021.320. Nor did DOE prepare an environmental impact statement (“EIS”) as required by NEPA and its own regulations. 42 U.S.C. § 4332; 10 C.F.R. § 1021.310. DOE did not conduct any NEPA review prior to issuance of the Designation Order, nor did it consult with other federal agencies having jurisdiction over endangered and threatened species and National Heritage Area preservation.

D. STATEMENT OF THE ISSUES, SPECIFICATION OF ERRORS, AND LEGAL ARGUMENT

The State joins in the petitions for rehearing submitted by the NYSDEC and NYSPPSC, and hereby incorporates the issues, arguments, factual assertions, and specification of errors set forth therein. In addition, pursuant to Section 313 of the FPA, 16 U.S.C. § 8251, the State seeks rehearing and consideration of the following issues and specifies the following additional errors of law in DOE’s issuance of the Designation Order.

1. DOE lacks the authority under Section 216 and the APA to issue an adjudicatory order or a rule designating the NIET Corridor.

FPA Section 216(a) contains clear and unambiguous language requiring DOE to conduct a study and issue a report on electric transmission congestion.

(1)...[T]he Secretary of Energy..., in consultation with affected States, shall conduct a study of electric transmission congestion.

(2) After considering alternatives and recommendations from interested parties, ... the Secretary shall issue a report, based on the study, which may designate any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers as a national interest electric transmission corridor.

FPA 216(a), 16 U.S.C. 824p(a) (emphasis added). Section 216(a) does not provide DOE with the authority to issue an adjudicatory order or rule like the Designation Order issued here, which makes factual findings related to congestion and adverse impacts on consumers and is binding on affected States. FPA Section 309, 16 U.S.C. § 824h, also does not provide DOE with the authority to issue the Designation Order at issue here. Although DOE has some latitude and discretion in performing its regulatory functions pursuant to Section 309, (*Niagara Mohawk Power Corporation v. Federal Power Commission*, 379 F.2d 153, 159 (D.C. Cir. 1967)), the fact finding function underlying the Designation Order and its binding affect on the States stands in a different light. The APA, 5 U.S.C. §§ 554, 556 and 557, does not authorize DOE’s issuance of the Designation Order, nor the “informal” process DOE followed in issuing it. The APA requires clear notice of the administrative action being taken, whether by adjudication or rulemaking, and strict compliance with detailed procedural requirements. Thus, the Designation Order is beyond DOE’s authority under Section 216 and the APA.

DOE characterizes the Designation Order as an “informal adjudication under the APA.” 72 Fed Reg. at 57,001. In passing Section 216(a), Congress did not direct DOE to adjudicate anything. Nor did Congress in Section 216 allow DOE to unilaterally abrogate the APA’s adjudicatory hearing and due process requirements. 5 U.S.C. §§ 554, 556-557.

Under the APA, an adjudicatory order is significantly different than the Congestion Study and Designation Report authorized by Section 216(a). An adjudicatory order adjudicates contested issues after an evidentiary hearing, contains factual findings, and is binding on affected parties. An adjudicatory order therefore carries far greater weight and effect than a study or report. Such an order is issued only after a formal hearing process that comports with the APA’s due process requirements. If DOE intended to issue an adjudicatory order, even a so-called “informal” one like the Designation Order here, it was required to comply with the APA’s hearing requirements, 5 U.S.C. § 554, as well as its own hearing regulations, 10 C.F.R. § 385.501 et seq. DOE did not conduct such an adjudicatory hearing here. The

record contains no statutory or factual basis to support DOE's "informal" adjudicatory Designation Order.¹

The Designation Order alternatively may be reviewed as the equivalent of a rule making within the meaning of APA 5 U.S.C. § 553, particularly since DOE intends to bind the States to the Corridor established in the Order for a period of 12 years. DOE did not comply with the APA's procedural requirements and, in fact, never notified the States that it intended to promulgate a functional rule establishing the Corridor, rather than issuing a report recommending the Corridor, as Section 216(a) envisions.

In making its findings of fact on transmission congestion and related adverse impact on consumers in the Designation Order, DOE relied on the Congestion Report. DOE seems to adopt wholesale the underlying data and report of its consultants, CRA International, Inc. DOE did not question CRA's report, despite the specific factual and technical objections to the Congestion Report asserted by numerous commentators, including the NYSpsc, that called the Report into question.² When the NYSpsc credibly challenged the data, information and assumptions contained in the Congestion Report, DOE had a duty to independently verify the factual basis on which it was relying. See *Sierra Club v. Flowers*, 423 F.Supp. 2d 1273, 1338 (D. Fla. 2006) (Corps of Engineers reliance on applicant's reports during NEPA review was erroneous; once credibly challenged as inaccurate, Corps was required to investigate and to subject reports to independent verification); see also 40 C.F.R. § 1506.5(a); *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (NEPA requires objective analysis and independent verification of information federal agency relies upon); *Sierra Club v. Marsh*, 701 F.Supp. 886, 912 (D. Me. 1988) appeal dismissed, 907 F.2d 210 (1990) (same). The record does not reflect that DOE conducted any independent verification of the information on which it relied, nor did DOE adequately address the apparent conflicts in the Designation Order.

DOE's approach fails to consider relevant economic factors, including whether new transmission will cost consumers more. This approach is entirely inconsistent with objectives of the FPA, which are designed to favor the consumer. The Designation Order binds New York to an energy plan that is contrary to the State's approach with respect to capacity. See NYSpsc November 2, 2007 Petition for Rehearing. New York is keenly aware of its own energy needs and is in the best position to determine a State energy policy after balancing a number of relevant factors. The Designation Order improperly encroaches on the State's right to determine and implement a balanced energy policy with appropriate solutions to energy needs, including those related to congestion.

Had Congress intended to give DOE the authority under the FPA to issue either an adjudicatory order containing factual findings or a rulemaking, both of which would bind the States for a period of 12 years, it would have expressly stated as much in Section 216. Congress did not. Even if Congress intended DOE to issue a binding adjudicatory order or a rule, DOE was required to comply with the procedural requirements of the APA, and to make clear to States the precise action it was taking. Consequently, DOE lacks the authority to issue the Designation Order at issue here.

2. DOE improperly included areas in the NIET Corridor that do not meet the criteria of Section 216.

FPA Section 216(a)(2) sets forth the criteria that DOE must meet in order to include a geographic area as part of the designated NIET Corridor. First, DOE must find that a geographic area is experiencing electric energy transmission capacity constraints or congestion. Second, the constraints or congestion must be adversely affecting consumers in those areas. 16 U.S.C. § 824p(a). DOE must find both criteria met before including a geographic area as part of the NIET Corridor. 16 U.S.C. § 824p(a). DOE's Designation Order purports to make factual findings of capacity constraints and adverse affects on consumers, but lacks proper support in the record for those findings.

a. There is nothing in the record to support DOE's factual finding that consumers in the Corridor are adversely affected within the meaning of Section 216(a).

¹There also is no statutory differentiation between "formal" and "informal" orders under the APA to support DOE's characterization. It is unclear from the Designation Order itself what the term "informal" means and whether DOE intends by the lack of formality not to bind the States affected by the Corridor.

²See NYSpsc's October 2006 Comments related to the Congestion Report.

The Designation Order summarily claims that simply because there may be congestion as little as 5% of the time, consumers are adversely impacted. 72 Fed.Reg. at 57,005. DOE assumes adverse effects on consumers without a factual basis showing such effects. There simply is no evidence in the record that all consumers throughout the massive geographic area designated as the Mid-Atlantic Corridor are adversely impacted. DOE merely speculates and theorizes that congestion must cause adverse impacts. 72 Fed. Reg. at 57,007. DOE's result-oriented speculation is insufficient to support DOE's finding that such an enormous geographic area is both constrained and adversely affected. Section 216(a) requires a finding of adverse impacts, not speculation, in order for a geographic area to be designated as part of the Corridor.

DOE improperly uses the so-called "source and sink" approach to the Corridor designation. 72 Fed. Reg. at 57,007. Under this approach, DOE has included in the Corridor both the "sources" of electric power generation and the "sinks" representing the end-use consumers that presumably are constrained and affected. This approach is contrary to the express language of Section 216(a), which directs DOE to include in the Corridor only those geographic areas found to be experiencing constraints that adversely affect consumers in the retail consumer end markets or "sinks" of congestion. 16 U.S.C. § 824p(a)(2) and (a)(4)(A). Inclusion of "sources" and all the areas in between is simply not authorized by Section 216(a).

DOE justifies its "source/sink" approach by characterizing as ambiguous Congress' use of the words "... any geographic area experiencing electric transmission capacity constraints or congestion that adversely affects consumers..." 16 U.S.C. § 824p(a). This characterization is DOE's veiled attempt to insulate its regulatory action from more probing judicial review under *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). The language of Section 216(a) is not ambiguous and focuses on consumers, not on power generators. This reading of Section 216(a) is consistent with the FPA's objectives, which are to protect the consumer, not the power industry. See *New England Power Company v. Federal Power Commission*, 467 F. 2d 425, 429 (D.C. Cir. 1972), *aff'd sub nom.*, 415 U.S. 345 (1974) (FPA's purpose in regulation of power is to benefit the public and there is "something fundamentally wrong" in regulating to benefit the industry).

DOE also fails to provide a basis in the record for setting the boundaries of the Corridor. DOE reasons that in setting the boundaries of the Corridor by using existing county borders, the Order provides "certainty." 72 Fed.Reg. at 57,008. DOE's does not provide any other basis for the boundaries. This too is not consistent with either the plain language of Section 216(a).

b. DOE included areas in the NIET Corridor that are not currently experiencing more than minimal transmission constraints or congestion.

DOE has included parts of New York in the Corridor that are simply not currently congested. Indeed, DOE included areas in the Mid-Atlantic Corridor that may have congestion less than 5% of the time, since that is the threshold in the Order. 72 Fed. Reg. at 57,005. The sheer size of the geographic area included in the Corridor, which covers some of the least populated areas of New York where there simply is no real congestion, graphically illustrates DOE's error.

DOE also asserts that the boundaries of the Corridor "are not based on any proposed transmission project." 72 Fed. Reg. at 56,999. This is not necessarily the case, however. Well before DOE issued the Congestion Study, at least one New York transmission line developer requested that DOE designate a specific and extensive area as part of the Corridor. In a March 6, 2006 letter, the New York Regional Interconnect, Inc. ("NYRI") requested that DOE designate approximately 190 miles as a transmission corridor, running from the Edic substation in the Town of Marcy, Oneida County, to the Rock Tavern substation in New Windsor, Orange County. With apparently no information related to actual adverse impacts on consumers in that 190-mile area, DOE simply incorporated NYRI's requested designation in the Congestion Report, (72 Fed. Reg. 25,838, 25,860), clearing the way for the exercise of FERC jurisdiction—and likely approval—of the project if the State does not act on the project within one year of the application. 16 U.S.C. § 824p(b). The NYSPSC will review and determine NYRI's application once it is complete. It is not clear that the NYRI project as proposed will actually relieve congestion in the areas in New York with the most significant constraints. The efficacy of the NYRI project remains at best a significant open question that will be resolved by the NYSPSC.

3. DOE violated the requirements of FPA Section 216(a) in failing to conduct a meaningful consultation with affected States.

Pursuant to Section 216(a), DOE was required to formally consult with affected States in the proposed designated Corridor. 16 U.S.C. § 824p(a). The requirement

to consult triggers a greater obligation than simply providing notice in the Federal Register with an opportunity to submit comments. Consultation envisions a formal process in which affected States are heard on a wide range of issues (e.g., congestion, costs, environmental impacts, transmission line siting, and other technical, and policy issues)³ When Congress included the consultation requirement in Section 216(a), it intended a far more meaningful role for the States in the Corridor designation process than the one DOE has afforded here.

DOE failed to initially create a formal consultation process in which the States could pursue a dialogue about the Corridor. Instead, DOE relied on informal communications with affected States in which no real dialogue or substantive consideration of issues took place. Most importantly, DOE disregarded the positions offered by affected States, including New York, in their comments submitted in opposition to both the Congestion Study and the Corridor designation. For example, DOE entirely ignored the NYISO conclusion that there is no need for a Corridor designation from a reliability standpoint. 72 Fed.Reg. at 25,858–25,860.⁴ Indeed, DOE never changed its position on any issue as a result of a State's comments. This is not "consultation" within the meaning or intent of Section 216(a).

DOE attempts to excuse its failure to consult with States by stating that "there are practical difficulties in conducting the level of consultation that some may prefer..." 72 Fed. Reg. at 57,002. DOE also points to the magnitude of the Congestion Study and the statutorily mandated deadlines as further reason why it failed to meaningfully consult with the States. 72 Fed. Reg. at 57,002. DOE essentially excuses its failure in this regard by stating that it "tried" to consult. In failing to properly consult with affected States, DOE has failed to comply with the Congressional mandate in Section 216(a).

4. DOE has violated the requirement of FPA Section 216(a) to consider alternatives to the transmission corridor, including other solutions to capacity constraints, upgrades to existing transmission lines, new generation, and a smaller or alternate geographic area for the Corridor.

DOE states that the requirement in FPA Section 216(a) to consider alternatives is "ambiguous" (72 Fed.Reg. at 57,010), again in a veiled attempt to insulate its actions under Chevron. DOE then interprets the term to mean that it is not required to consider any alternatives to the Corridor designation or any other solutions to the problem of congestion. 72 Fed.Reg. at 57,010. This position is entirely inconsistent with the plain language of Section 216(a), with Congressional intent in using the term "alternatives," and with the use of that term of art in other federal laws and regulations. The term simply is not ambiguous and requires an evaluation of other options to the action.

In using the term "alternatives," Congress obviously intended that NEPA would guide DOE's consideration of the Corridor designation. The mandate to consider alternatives is an reference to NEPA's identical mandate that all Federal agencies consider alternatives when undertaking an action. See 42 U.S.C. § 4332(2)(C)(iii) (all agencies of the Federal Government shall ... include ... a detailed statement by the responsible official on—... alternatives to the proposed action...). DOE's position is without merit in light of Congress' clear mandate in NEPA that all Federal laws "shall be interpreted and administered in accordance with the policies set forth in this chapter." 42 U.S.C. 4332(1); see also 40 C.F.R. § 1506.5. The term "alternatives" in Section 216 is not subject to any other interpretation.

Contrary to DOE's position, Section 216 requires DOE to consider alternatives, for example, to the size and location of the Corridor, and to review other solutions to capacity constraints besides new transmission lines, such as transmission line upgrades, local distribution, new generation, and other technologies. 16 U.S.C. § 824p(a). In refusing to consider and evaluate alternatives, DOE has failed to comply with the letter and spirit of both Section 216(a) and NEPA.

5. DOE violated NEPA and its own NEPA-implementing regulations in finding that the Designation Order did not constitute a "major federal action" subject to environmental review.

DOE states that the Designation Order does not constitute a "major federal action" subject to NEPA because "national corridor designations have no environmental impact" and "are only designations of geographic areas in which DOE has

³There are formal consultation processes established under numerous federal laws. See, e.g., USFWS Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act (March 1998).

⁴NYISO's Reliability Needs Assessment states that "there is no need for a National Corridor [in New York] from a reliability standpoint."

identified electrical congestion or constraint problems.” 72 Fed.Reg. at 56,992. DOE mischaracterizes the adjudicatory nature and affect of the Designation Order, and ignores the express language of Section 216, NEPA and its own regulations. DOE also disregards the anticipated future federal action by FERC.

NEPA broadly defines “major federal actions” to include those that may be subject to Federal control and responsibility, as well as actions that are “new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies; new or revised agency rules, regulations, plans, policies or procedures; and legislative proposals. 40 C.F.R. 1508.18(a).⁵ NEPA specifies actions that are subject to NEPA, including the “[a]doption of programs, such as a group of concerted actions to implement a specific policy or plan;” and “...connected agency decisions allocating agency resources to implement a specific statutory program...” 40 C.F.R. 1508.18(b)(3). The entire scheme of Section 216 is such a program, plan or policy.

DOE’s own NEPA regulations incorporate the definition of “major federal action” that is forth in the main NEPA regulations, 40 C.F.R. 1508.18, and similarly define an “action” to include “a project, program, plan, or policy ... that is subject to DOE’s control and responsibility.” 10 C.F.R. § 1021.104. DOE’s regulations also contain a mandatory requirement to prepare an EA for purposes of determining whether the action is a “major federal action” See 10 C.F.R. § 1021.320 (“DOE shall prepare and circulate EAs ... in accordance with the requirements of the CEQ regulations.”). DOE did not prepare an EA here. Once it prepares an EA, DOE then must determine whether the action is a major federal action. If it is, DOE then must determine whether the action will have a significant affect on the quality of the human environment warranting preparation of an EIS. 10 C.F.R. § 1021.320. DOE’s regulations require a determination of the level of NEPA review and whether an EIS will be prepared “as soon as possible” after DOE proposes an action. 10 C.F.R. § 1021.200(b) and (c). DOE did not follow its own regulations in issuing the Designation Order.

The Congestion Report and the Designation Order here represent the commencement of a “project, program, plan or policy” that is “under DOE’s control and responsibility” within the meaning of NEPA and DOE’s regulations. See 10 C.F.R. § 1021.104 and 40 C.F.R. § 1508.18 (both broadly defining “major federal action”). Thus, the Designation Order constitutes a major federal action is because it sets the foundation for anticipated—and continuing—energy development in the NIET Corridor through the construction and operation of electric transmission lines, either under FERC’s or a State’s permitting authority. See 16 U.S.C. § 824p(a) and (b).

DOE attempts to justify its finding that the Designation Order is not a “major federal action” by stating that the Corridor designation itself has no environmental impact and that when specific transmission projects are proposed in the future, FERC will review the environmental impacts of those projects at that time under NEPA. 72 Fed. Reg. at. 57,021-23. DOE ignores the continuing nature of Section 216’s scheme to develop transmission in the Corridor. 16 U.S.C. § 824p(a) and (b). In doing so, DOE also ignores its own NEPA obligations. DOE disregards the anticipated development of transmission lines expected as a result of the Designation Order, and the unavoidable cumulative environmental impacts that flow from that development. Even though DOE concedes that FERC or the States will issue construction permits for major transmission projects in the Corridor, which are likely to have a significant adverse impacts on the environment, it nevertheless states that the necessary environmental review will be conducted at a later time. 72 Fed. Reg. at. 57,021-23. DOE’s deferral of its own NEPA obligation is contrary to the statute and to the practices of other federal agencies. See, e.g., *Arkansas Wildlife Federation v. United States Army Corps of Engineers*, 431 F.3d 1096 (8th Cir. 2005) (EIS for Demonstration Project properly included cumulative impact review of four existing projects, two pending projects, three unauthorized and unfunded projects, five other projects, and several potential projects which were not reasonably foreseeable).

The Designation Order itself states that it is “the first step in the process of determining whether to provide a potential Federal forum that would examine whether addressing congestion through transmission expansion is in the public interest.” 72 Fed.Reg. at 57,004.⁶ The Order clearly contemplates subsequent federal action as

⁵The NEPA regulations, promulgated by the Council on Environmental Quality, govern all federal agencies. 40 C.F.R. § 1501 et seq.

⁶Similarly, in the Congestion Report, DOE characterizes the Designation Order as a “necessary first step” in siting transmission lines in the Corridor. See DOE “National Electric Transmission Congestion Report and Final National Corridor Designations, Frequently Asked Questions,” p.1, § 2 (October 2, 2007).

a result of DOE's Corridor designation. Congress designed NEPA to reach exactly this type of regulatory "first step" that the Designation Order represents, namely, the beginning of federal transmission siting authority within the Corridor under Section 216(b). 16 U.S.C. § 824p(b). NEPA requires federal agencies to apply NEPA at the earliest possible time and not wait for later review. *Port of Astoria v. Hodel*, 595 F.2d 467, 478 (9th Cir. 1979) (federal agency's execution of power supply contract was "major federal action" under NEPA because it entailed further major federal actions, including construction of generation facility and transmission lines); *Environmental Protection Information Center v. United States Forest Service*, 2003 U.S. Dist. LEXIS 18241 (N.D. Ca. 2003) (Forest Service fire management plan covering one million acres of forest land was a decisionmaking document that determined rights and obligations and had legal consequences, and was therefore subject to NEPA's requirements to prepare as EA and EIS). DOE's finding that its Designation Order is not an action subject to NEPA because FERC may apply NEPA at a later time violates the letter and spirit of NEPA and is contrary to DOE's implementing regulations.

DOE's mischaracterization of the Congestion Study and Designation Order disregards settled case law in construing NEPA when an agency anticipates further federal actions. See *Port of Astoria, Oregon v. Hodel*, 595 F.2d at 477-78; see also *Environmental Defense Fund v. Higginson*, 655 F.2d 1244, (D.C. Cir. 1981) (Department of Interior may not delay NEPA review of its region-wide plan for numerous federal water projects until specific project is proposed). It is plain that where, as here, a federal agency proposes a regional plan of development of electric transmission lines such as the NIET Corridor, that action is subject to NEPA. *Kleppe v. Sierra Club*, 427 U.S. 390, 401 (1976). DOE cannot avoid its NEPA objections by relying on another federal agency's future actions.

NEPA Section 102 does not permit delaying assessment of environmental impacts even if such impacts will be evaluated later in the context of a site-specific proposal. 42 U.S.C. § 4332; *Kern v. United States Bureau of Land Management*, 284 F.3d 1062, 1072 (9th Cir. 2002) (guidelines incorporated into regional plan was a major federal action requiring an EIS); *Port of Astoria v. Hodel*, 595 F.2d at 477-78. Only when a federal agency considers the environmental consequences of a potential series of future federal actions at the earliest possible time, can those actions be adequately evaluated at the point when alternatives are still available. See *Kleppe v. Sierra Club*, 427 U.S. at 401-02; see also *Norton v. Southern Utah Wilderness Alliance*, 542 U.S. 55, 69-70 (2004) (federal land use plan of immense scope is a major federal action subject to NEPA when it is a preliminary step in the overall agency planning process that guides but not prescribe future action).

In determining whether to prepare an EIS, DOE is also required to consider the degree to which the Designation Order is highly controversial. 40 C.F.R. § 1508.27(b)(2). Where there is a substantial dispute regarding the size, nature or effect of the action, it is considered "major." See, *Cold Mountain v. Garber*, 375 F.3d 884, 893 (9th Cir. 2004); *Hanley v. Kleindienst*, 471 F.2d 823, 830-31 (2nd Cir. 1972). With more than 2000 comments submitted in this proceeding, many vigorously disputing the factual and legal basis of the Order and questioning the sheer size of the Corridor, the highly controversial nature of DOE's action cannot seriously be disputed.

NEPA also requires DOE to assess whether the Designation Order establishes a precedent for further federal action with significant effects. 40 C.F.R. § 1508.27(b)(3). NEPA requires DOE to evaluate whether the action is related to other actions which may have cumulative impacts. 40 C.F.R. § 1508.27(b)(4).

DOE has violated both the statutory mandate in NEPA Section 102 and its own regulations in issuing the Designation Order, and has no support in the record for its claim that the Corridor designation is not "major federal actions."

6. DOE has violated the ESA and the HRVNHA in failing to conduct the statutorily required consultation with appropriate federal agencies, in cooperation with the States, prior to issuance of the Designation Order.

a. The ESA

DOE erred in issuing the Designation Order without first consulting with the United States Fish and Wildlife Service ("USFWS") with respect to the threatened and endangered species found within the Corridor. The ESA requires federal agencies to conserve and protect these species, and to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated critical] habitat . . ." 16 U.S.C. 1536(a)(2). The ESA imposes a strict procedural consultation duty whenever a fed-

eral action may affect an ESA-listed species. *National Association of Homebuilders v. Defenders of Wildlife*,—U.S.—; 127 S. Ct. 2518, 2526; 168 L. Ed. 2d 467, 478 (2007); *Thomas v. Peterson*, 753 F.2d 754, 763 (9th Cir. 1985). States are integrally involved in this process when species within the State will be affected by the federal action.⁷

The ESA applies to any “action” by a federal agency, is broadly defined to include “all activities or programs of any kind authorized, funded or carried out, in whole or in part, by Federal agencies in the United States. 50 C.F.R. § 402.02. The federal agency undertaking the action must consult with appropriate other agencies to ascertain whether the action will jeopardize the continued existence of endangered or threatened species. 16 U.S.C. § 1536(a)(3); 50 C.F.R. §§ 402.10-402.16. The agency undertaking the action initiates the consultation process by a formal written request to the consulting agency. After consultation, investigation, and analysis, the consulting agency then prepares a biological opinion and may make a “jeopardy determination” that the species will or will not be harmed by the action⁸ *National Association of Homebuilders*,—U.S.—; 127 S. Ct. at 2526; 168 L. Ed. 2d at 478. ESA compliance, including consultation, is not optional. *National Wildlife Federation v. National Marine Fisheries Service*, 481 F.3d 1224, 1235 (9th Cir. 2007).

DOE was required to consult with the USFWS because of the presence of endangered and threatened species throughout the Corridor.⁹ The USFWS and its State counterpart, the NYSDEC, were entitled to the opportunity to independently evaluate DOE’s Corridor designation action to determine if it could impact protected species. DOE’s failure to consult with USFWS, or even notify it of the proposed Corridor designation is a clear violation of the ESA.

b. The HRVNHA

DOE also erred in issuing the Designation Order including over the area in the Hudson River Valley National Heritage Area, without first consulting with the Secretary of the Department of the Interior and the appropriate State entities,¹⁰ as required by the HRVNHA. In addition to the Hudson River Valley Area, the Designation Order also includes the Erie Canalway National Heritage Area and the Champlain Valley National Heritage Partnership, both of which are also protected under the National Heritage Act, 16 U.S.C. § 461, et seq.¹¹ Congress has declared that the national policy is to preserve and protect sites of national historical and cultural significance. 16 U.S.C. § 461. DOE’s failure to comply with this policy through consultation is inconsistent with this policy.

The HRVNHA expressly requires consultation prior to a federal agency undertaking any activity that may affect the Hudson River Valley National Heritage Area. P.L. 104-333, § 908(b)(1) and (2). The geographic scope of the Order includes the more than three million-acres designated as protected by Congress in the HRVNHA and subjects to a management plan that both federal and state agencies formulated. The Designation Order plainly affects it. Moreover, the HRVNHA requires the consultation process to include an evaluation of alternatives to the activity, or a determination that there is “no practicable alternative” to the activity.¹² This requirement is consistent with Section 216’s mandate to consider alternatives, as well as with NEPA’s similar mandate. DOE ignored the special protection af-

⁷ See NYSDEC Petition for Rehearing, Nye Affidavit, ¶ 6.

⁸ The consulting agency evaluates the effects of the proposed action on the survival of species and any potential destruction or adverse modification of critical habitat in a biological opinion, based on “the best scientific and commercial data available,” 16 U.S.C. § 1536(a)(2) and (b). The biological opinion includes a summary of the information upon which the opinion is based, a discussion of the effects of the action on listed species or critical habitat, and the consulting agency’s opinion on “whether the action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat” 50 C.F.R. § 402.14(h)(3).

⁹ See NYSDEC November 2, 2007 Petition for Rehearing, pp. 17-18 and Affidavit of Peter Nye listing the endangered and threatened species found in the New York portion of the Corridor.

¹⁰ The State entities with jurisdiction under the Management Plan to consult with any federal agency proposing an activity in the designated Hudson River Valley National Heritage Area are the Hudson River Greenway Council and the Greenway Conservancy for the Hudson River Valley.

¹¹ Pub. No. 105-83, Title III, §§ 317 and 324, 111 Stat 1595, 1597 (1997); Pub. L. No. 106-176, § 206, 114 Stat. 23 (2000). See NYSDEC November 2, 2007 Petition for Rehearing, pp 16-17; 20-22.

¹² The Department of Transportation must make a similar finding of “no prudent or feasible alternative” to using publicly owned parkland or historic sites for a transportation project, and requires “all possible planning” to minimize and mitigate harm to the resource. See Transportation Law § 4(f), 49 U.S.C. § 303(c); see also, *Stewart Park & Preserve Coalition, Inc. v. Slater*, 352 F.3d 543 (2d Cir. 2003).

forded the Hudson River Valley National Heritage Area in not consulting with proper Federal and State entities, and in failing to consider alternatives to the inclusion of the Area in the Designation Order.

CONCLUSION

DOE's Designation is contrary to law and is otherwise arbitrary, capricious, an abuse of discretion, and without basis in the record. For the reasons set forth above, rehearing should be granted and the Designation Order should be vacated.

Date: November 5, 2007.

ANDREW M. CUOMO,
Attorney General.
MAUREEN F. LEARY,
Assistant Attorney General.

STATEMENT OF TYRONE J. CHRISTY, PENNSYLVANIA PUBLIC UTILITY COMMISSION

I am Tyrone J. Christy, one of the five Commissioners of the Pennsylvania Public Utility Commission (PAPUC). I am submitting the following written testimony, on behalf of the majority of the PAPUC, in lieu of presenting formal testimony to the Senate Energy and Natural Resources Committee in its hearings scheduled to occur on July 31, 2008.¹ This testimony addresses the implementation of Section 1221 of the Energy Policy Act of 2005, specifically with regard to the statutory provisions governing designation of National Interest Electric Transmission Corridors (NIETCs).

We believe that both the statutory provisions of Section 1221 and the implementation of those provisions by the U.S. Department of Energy ("DOE") and the Federal Energy Regulatory Commission ("FERC") are flawed. The statute is flawed because it is based upon the unproven assumption that State commissions and State judicial systems cannot be trusted to properly review transmission siting applications and that federal oversight is needed over all State siting proceedings. Additionally, Section 1221 gives transmission project owners nearly unfettered discretion to pursue their interests either in State courts or at FERC, while giving other parties no choice of forum at all. This open invitation to forum shop is contrary to traditional notions of justice and due process. The federal agencies have converted a statute meant to encourage the speedy resolution of State transmission siting applications into a vastly greater preemption of State police powers that have been properly exercised by the states from the earliest days of the development of the interstate electric transmission grid. The implementation of Section 1221 is flawed because DOE has ignored or given short shrift to Congress's required findings of National interest, actual congestion and severe economic loss as a necessary predicate to the establishment of NIETCs.

Moreover, Section 1221 has allowed the FERC to expand its jurisdiction over the siting application review process to include not only those State proceedings that are delayed by more than one year or approved subject to burdensome conditions, but additionally to those State transmission siting proceedings that result in the rejection of a transmission siting application.

As background, I would note that the PAPUC is a State administrative agency created by the General Assembly of the Commonwealth of Pennsylvania and is charged with the regulation of rates and service for electric distribution utilities within the Commonwealth and the licensing of generation suppliers within the Commonwealth. Pennsylvania is also served by transmission companies belonging to the PJM Interconnection, LLC (PJM) and the Midwest ISO (MISO). Major portions of the Commonwealth (approximately 52 of 67 counties) have been designated as being within the DOE's initial designation of the Mid-Atlantic NIETC corridor in its order issued October 5, 2007. This designation constitutes three quarters of the Commonwealth, and includes many State parks and game lands, historical and archeological sites and areas of the State where no significant transmission exists today. Pennsylvania is not unique in the Mid-Atlantic region. Equally large portions of our neighboring states were also identified within the Mid-Atlantic NIETC including New York, New Jersey, Delaware, Maryland, Virginia and West Virginia. In fact, there is relatively little area in the Mid-Atlantic region that is not encompassed within the Mid-Atlantic NIETC. Oddly, DOE's designation stops at the border between New York and New England, even though there is substantial transmission congestion in that region.

¹Commissioner Powelson did not concur in this Testimony.

The purpose of my statement is to express our essential disagreement with DOE's implementation of the transmission provisions of the Energy Policy Act of 2005 (EPAAct of 2005). My comments address the following general concerns:

(1) Section 1221 of EPAAct of 2005 unambiguously directed the DOE to consider a number of listed factors in its designation of NIETC corridors. The DOE did not, in fact, adequately consider those factors in any meaningful way, such that its ultimate interpretation and implementation of Section 1221 is inconsistent with the Congressional intent behind EPAAct of 2005.

(2) The process followed by DOE, in its corridor designation process, was both seriously flawed and overbroad in that DOE has designated a "transmission park" not a "transmission corridor" or series of corridors, as Congress intended.

(3) The process followed by DOE in its corridor designation failed to adhere to Congress's limited grant of authority and therefore unlawfully pre-empted State authority and State police powers to review and approve siting of transmission projects within State boundaries.

(4) The overly expansive interpretation and administration of Section 1221 by DOE and FERC have rendered most State transmission siting review proceedings within Pennsylvania to be subject to review by the FERC, an administrative agency that routinely disposes of important matters summarily without hearing. The federal "back-stop" process delegated to the FERC has been interpreted by that agency in a manner that renders State review essentially as a formality.

DOE was directed, pursuant to Section 1221(a), to consider five factors in whether to designate a NIETC.

In determining whether to designate a National interest electric corridor under paragraph (2), the Secretary may consider whether:

(1) The economic vitality and development of the corridor or the end markets served by the corridor may be constrained by the lack of adequate or reasonably priced electricity;

(2) Economic growth in the corridor or the end markets served by the corridor may be jeopardized by reliance on limited sources of energy and whether a diversification of supply is warranted;

(3) The energy independence of the U.S. would be served by the designation;

(4) The designation would be in the interest of National energy policy;

(5) The designation would enhance National defense and homeland security.

The DOE designation of the Mid-Atlantic corridor failed to adequately consider any of the foregoing factors to any significant degree. One significant flaw was DOE's failure to adequately address the existence of end-markets that are defined to be the areas where electric load is the greatest and where the greatest consumption of electricity will occur. Despite the clear enumeration of these factors in Section 1221, the DOE implementation Order of October 5, 2008 did not examine or even explain the effect of corridor designation on "end markets." "End-markets" are defined to be the area where electricity is delivered for ultimate consumption. The DOE Order did not identify "end markets" nor did DOE associate any generation source with such "end markets." The DOE Order did not address how the economic vitality, growth or the development of the corridor would be affected by lack of reasonably-priced electricity as mentioned in Section 1221 (a)(4)(A) and (B). Little or no consideration of diversification of supply was apparent in the Order (Section 1221(a)(4)(B)). Other notable deficiencies include DOE's failure to explain how the corridor designation would contribute to the energy independence of the U.S. and DOE's failure to identify any particular energy policy or how such an energy policy would be advanced by this NIETC designation. (Section 1221(a)(4)(C)). There was no analysis of the effect of corridor designation on National defense or homeland security. (Section 1221(a)(4)(D)). These deficiencies are not minor. Section 1221 requires, by Congress's own express terms, the designation of National Interest Electric Transmission Corridors. The obvious failure of DOE to identify or discuss in any clear way the impact of its designation positively or negatively on the National interest, economic vitality, development and growth of the corridor or end-markets represents a fundamental flaw in DOE's implementation of this provision.

The DOE's methodology for drawing the geographic boundaries was to compile a list of major "underused" generation facilities and wind facilities, compile another list of transmission "sinks" (load or demand areas) and then draw a boundary line around those facilities, including every county even if only a small portion of that county was touched by the boundary line. DOE's own NIETC Report notes that political boundaries located within the "source and sink" designation would have no impact on the design of the electricity transmission facilities yet county boundaries

are the building blocks of the DOE's corridor. The DOE failed to designate the starting points and the ending points of any particular congestion path that it seeks to ameliorate through this designation that would have been a more rational methodology than the method so employed.

A corridor has a starting point and an ending point and a defined path between the two points. DOE's designation might have been easy to execute, but satisfies none of the characteristics of a corridor and vastly over-designates portions of the Mid-Atlantic region subject to federalized siting procedures. This DOE designation may rightfully be termed a "transmission park" painted with a broad brush. By its action, DOE has opened up large regions of the Mid-Atlantic region to transmission developers seeking to take advantage of DOE's expansive designation.

In Pennsylvania's case, this designation means that all transmission project owners in three quarters of the State will have the ability to remove their projects from Commonwealth jurisdiction without a showing that any of these projects actually relieve any congestion, contribute to fuel diversity, provide any reliability benefit or meet any of the Congressional goals in the passage of this provision of EPAct 2005.

Traditionally, the state, as sovereign, has been the sole source of the eminent domain power exercised by public utilities subject to State police power regulation. Because of the permanently disruptive effect that transmission line construction has on the populace along the route of the line (as well as the permanent impact on the environment, and on cultural and archeological resources), the PAPUC has promulgated detailed regulations and hearing procedures designed to fully examine, on the record, the reasons and justification for the transmission line, available alternative routes and other relevant considerations. Landowners that might be subject to a potential taking are provided an opportunity to appear in the proceeding and actively participate. This procedure has worked well for many years. Other affected states have similar procedures. The preemption of State authority by a separate FERC siting procedure, if left unchecked, will freeze many interested participants out of the process, and leave the vindication of State environmental, cultural, archeological and aesthetic concerns to the discretion of a federal agency far removed from the local, environmental, historical, cultural and aesthetic issues involved in every siting proceeding.

This federal assumption of power does not only apply to a few big project proposals. Because of DOE's overdesignation, in Pennsylvania's case, virtually every transmission siting case would be subject to the FERC permitting process if the PAPUC did not act on a siting application within a year or "withheld approval" of a project. While DOE and FERC may believe that Federal agencies can always do a better job of transmission siting than any state, a recent minor and typical transmission siting application case before the PAPUC illustrates the problem. The siting application involved a 138 kV transmission line spanning three townships in a single county and took 11 months to process—only one month short of the required one-year timeframe. Small cases are not necessarily quicker to process than large cases. Most transmission project filings that come before the PAPUC and other State siting agencies consist of relatively local transmission facility upgrades that play no substantial role in the relief of interstate transmission or constraints. But DOE's very expansive interpretation of Section 1221 and the NIETC designation process do not prevent such minor or wholly intrastate transmission projects from seeking FERC review. Any transmission project within the DOE NIETC may apply. It is little comfort that FERC might assure your Committee that it may decide that such projects aren't worthy of its review. FERC's interpretation of its discretion under its current rules is broadly expansive and does not comport with the explicit statutory standards imposed on FERC. State siting authorities and citizens should not be required to go to Washington to preserve the integrity of State siting proceedings which Congress did not intend to extinguish.

Indeed, as reflected in FERC's regulation at 18 C.F.R. Section 50.6, that agency's interpretation of the statutory phrase "fails to act" suggests that the State has no real option other than to approve (or approved with limited conditions) a proposed transmission line that lies in a NIETC corridor, regardless of whether the line meets State law standards. If this interpretation is correct, State proceedings become, in large measure, a formality. While Congress may have a legitimate interest in making sure that State transmission siting cases are not unreasonably delayed, FERC's interpretation appears to go well beyond that goal, nearly to the extent of wholly preempting state transmission siting jurisdiction.²

There is a relatively simple solution to this dilemma—DOE must more narrowly define NIETCs as true corridors. Corridors have an entry point at the source, an exit point at the load and a congestion interface across which the transmission

²See FERC Order at Docket RM06-12-000 at p. 129.

project crosses and where the congestion occurs. By defining corridors in this way, the ability of competing solutions (increased generation, transmission or load response) to resolve the congestion issue would be greatly enhanced. As we interpret it, that would properly effectuate the true intent of the Section 1221, promote needed National interest transmission capacity and preserve the critical role of the PAPUC and other State siting authorities in exercising their siting duties. Our Constitution recognizes, in its creation of the federal system with the complementary roles of State and National authority, that it is not wise to centralize every function of government. Most transmission siting cases are local or regional in scope, have little or no impact on interstate commerce and the broad National interest and are best handled at the State level in a manner respectful of State police powers and State interests.

The current expansive implementation of Section 1221 by DOE and FERC does not respect such State interests, burdens State jurisdiction and resources, and threatens to render every State transmission siting proceeding as an empty prelude to the initiation of the Federal transmission siting process. Our Nation's federal system of government was prescribed in the Constitution because experience has repeatedly shown that it is not wise to centralize all decision making at the National level—local and regional issues are more effectively and efficiently decided on a local or regional basis. This concludes my testimony. I appreciate the opportunity to file this testimony with the Committee.

STATEMENT OF PETER BENSON, MEMBER OF DROP THE LINES, INC.,
DANIELSVILLE, PA

I am a citizen of the United States of America, a resident, a taxpayer and registered voter in Pennsylvania. I am also a member of Drop The Lines, Inc a citizens action group formed to encourage the responsible development of transmission lines in Pennsylvania.

In accordance with section 216(a) of the Federal Power Act, the U.S. Department of Energy (DOE) issued an order on October 2, 2007, for two National Interest Electric Transmission Corridor (National Corridor) designations. The mid-Atlantic corridor covers over half of the state of Pennsylvania and includes my home in Northampton County.

No one can dispute that as a nation we require a safe and efficient source of power and it is the role and responsibility of our government to ensure, through fiscal incentives and regulation, that the goal is accomplished in a fair and just manner.

We must however also recognize that for profit organizations exist solely to maximize shareholder value. It is wrong to expect a corporation to gratuitously act in the national interest or to have a social conscience; these are not within their nature. This is not a reflection of the organizations or the individuals that manage them but a reality of the purpose for which for profit corporations are organized. A shareholder would rightly have cause to sue any corporation that dispersed funds in any activity that could not be shown to further its stated mission. That is not to say that corporation do not support environmental or national causes, they do, but only when such action furthers their goals of increasing revenue (customer perception leading to a willingness to spend) or decreasing costs (voluntary compliance is less expensive than regulatory compliance). This is not a cynical view of corporations but simply the reality of the corporate framework.

We have seen and we can expect the electricity transmission companies to pursue the solution that provides them with the highest return on their investment. It is the role of government to ensure that there is an adequate regulatory and legislative framework that protects the interests of those impacted by the transmission corridors, this does not currently exist.

The DOE in its use of the Federal Power Act to designate transmission corridors effectively diminished if not destroyed individual property rights and environmental responsibility. While they did so in the national interest it will be implemented by corporations solely in the interest of shareholder value.

The for profit energy generation, transmission and distribution companies have clearly demonstrated that it is a better use of their funds to purchase back their shares than to invest in their aging infrastructure. The NIETC simply give them the opportunity to acquire new assets cheaply rather than use the ones they have more efficiently.

In Pennsylvania we will bear the burden of new and bigger power lines destroying our beautiful landscape as older lines fall into disuse and become blighted towers of rust.

The committee has within its power to correct this problem by recommending the appropriate use of fiscal incentives and regulations to ensure there is a fair balance between shareholder value and the national interest. Some suggestions are as follows:

1. Recommend an energy export tax: The purpose of the tax would be to encourage local production of energy. Energy generation and energy transmission companies would be taxed on the net energy exported or transmitted through a local area (State or County). The tax would have the added benefit of compensating the residents of a local area where energy is being generated in or transmitted through. The response of the power generation and transmission companies would be to adjust their pricing accordingly, lowering the price in the producing or transmission area and increasing the price in the area of the consumption making local production such as residential or commercial solar more attractive.

2. Right of way compensation: In addition to the fair value of the real estate, compensation for a right of way should include an ongoing payment based on a percentage of the value derived from the right of way. Such a payment would ensure visibility of the true value derived from right of way and ensure fair compensation to those who lost "their" rights in the national interest.

3. To ensure more efficient use of existing infrastructure 1 and 2 above should apply to "new" infrastructure. Based on the example of PPL here in Pennsylvania it is clearly cheaper to put in a new line than to upgrade an older line and doubly so if the new line brings with it the potential of new customers.

Finally in a world of rapidly advancing technology we can expect that the unit price of Photovoltaic cells (PV) will continue to decrease as their efficiency increases just as we have seen with computer memory. This emerging trend will increasingly become apparent over the next few years and it is highly possible that before the new gigantic towers designed to transmit power from one side of the county to another are completed, they will be obsolete. Consideration should therefore be given to the restitution of rights of way and the removal of the power transmission lines other than through the use of the Superfund.

STATEMENT OF MARJORIE (MAGGIE) MULLER, MEMBER OF DROP THE LINES, INC

I am a citizen of the United States of America and a resident and taxpayer and registered voter in Pennsylvania. I am also an active member of Drop The Lines, Inc.

My name is Marjorie (Maggie) Muller. On June 17, 2008 my life changed. I learned about PPL and their proposed 3 routes for power lines across PA, the Susquehanna Roseland Project, for energy needed for New Jersey. I learned that a big company could make a lot of money by ripping up Pennsylvania under the cover of the NIETC (including the use of eminent domain). I learned about the NIETC, the National Interest Electricity Transmission Corridor.

I love where I live. I love that I live at the base of this beautiful pristine Blue Mountain, right below the Appalachian Trail. Governor Rendell recently, so brilliantly signed legislature to protect this historic trail. My husband has lovingly cared for this beautiful property of ours adjoining state game lands, right below the Appalachian Trail, for 23 years. Our many neighbors have land that has been passed down from generation to generation. We, my husband and I, put all of our money into this beautiful location and property, just recently adding an addition to our home, so we can survive our senior years. It is our retirement. Who would have ever thought that anything next to state game lands at the base of a mountain in PA would ever be destroyed? Why would anyone want to rape Pennsylvania, for the power needs of a state (NJ) that refuses to take care of their own needs, by outlawing Nuclear Plants and Coal fired plants or not researching other avenues of energy production?

And, we in Pennsylvania, are a Commonwealth. That means that the people have a say. Does that not trump big business and the easy way out, in hopes that no one would care?

On a practical note, the erosion problem from power lines along this mountain would be devastating, (it is already an issue) and the water contamination effecting three headwaters trickling over herbicides used to control vegetation for many many miles, would be inhumane.

Speaking of inhumane, a friend told me of a friend of hers that got a great deal on a home that was under a power line. Her friend had 2 conceptions resulting in

Tourette's syndrome and her friend chose to abort the third conceived child because it was so deformed that she elected to not bring it into this world.

I would like to point out (as stated in the previously submitted testimony of Andrew M. Loza, Executive Director of PA Land Trust Assoc. on 7/31/08) that there are numerous other ways to provide energy that were not considered before the 2005 Energy Policy Act (which established the NIETC) was passed, and that may meet the NIETC requirements, rather than ripping up pristine areas and homes of the Commonwealth of Pennsylvania, for 500 KVolt power lines. I don't believe that all manners of securing national energy requirements were adequately investigated before the passing of the NIETC. And, as pointed out in the previously mentioned testimony, the massive use of high energy power lines is more of a danger to our national security than a help. A target.

Also, does this not monetarily benefit a big corporation as well? Their name is PPL, and they are not Pennsylvania friendly as their name would imply. Our rates go up, NJ gets relatively inexpensive power, and we, residents of the Commonwealth of Pennsylvania, do not benefit. No one has responded to our request for proof that this is needed to help Pennsylvanians who they want to sacrifice for New Jersey.

What is the compensation to the homeowners whose property value is destroyed? Thank you for your time and consideration in this matter of great concern.

CITIZEN PETITION OF 4,511 SIGNATURES*

STOP PENNSYLVANIA FROM BECOMING AN ELECTRIC TRANSMISSION LINE
SUPERHIGHWAY

We reject a one-size-fits-all program dictated from Washington to site electric transmission lines. We want a process for siting transmission lines that: includes full and open public hearing, good-faith consideration of public comments, alternative methods of relieving electricity congestion, locally-sited power generation, and balances potential impacts to state renewable electricity and global warming initiatives.

We need a program to secure clean and reliable energy, not a narrow-minded program that ignores the will of the people. The answer is not the National Interest Electric Transmission Corridors program.

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*Signatures have been retained in committee files.