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FEDERAL POWER ACT: HISTORICAL PERSPECTIVES

WEDNESDAY, SEPTEMBER 7, 2016

House of Representatives,

Subcommittee on Energy and Power,

Committee on Energy and Commerce,

Washington, D.C.

The subcommittee met, pursuant to call, at 10:05 a.m., in Room 2322, Rayburn House Office Building, Hon. Pete Olson, [vice chairman of the subcommittee] presiding.

Present: Representatives Olson, Barton, Shimkus, Latta, Harper, Pompeo, Kinzinger, Griffith, Johnson, Ellmers, Flores, Mullin, Hudson, McNerney, Tonko, Engel, Green, Welch, Loebsack, and Pallone (ex officio).

Staff Present: Will Batson, Legislative Clerk, Energy and Power; Tom Hassenboehler, Chief Counsel, Energy and Power; A.T.

Johnson, Senior Policy Advisor; Ben Lieberman, Counsel, Energy and Power; David McCarthy, Chief Counsel, Environment and Economy; Brandon Mooney, Professional Staff Member, Energy and Power; Annelise Rickert, Legislative Associate; Chris Sarley, Policy Coordinator, Environment and Economy; Dan Schneider, Press Secretary; Andy Zach, Counsel, Environment and Economy; Robert Ivanauskas, Detailee, Energy and Power; Jeff Carroll, Minority Staff Director; Rick Kessler, Minority Senior Advisor and Staff Director, Energy and Environment; John Marshall, Minority Policy Coordinator; Alexander Ratner, Minority Policy Analyst; Tim Robinson, Minority Chief Counsel; Tuley Wright, Minority Energy and Environment Policy Advisor; and C.J. Young, Minority Press Secretary.

Mr. Olson. The hearing will come to order. This hearing is called Historical Perspectives on the Federal Power Act. And that is just what it is. Historical perspective so we can learn more going forward.

It is a little awkward day for me. I am not used to being in this seat. But I will do my best. As per normal, I will have an opening statement, Mr. McNerney will, Mr. Upton will, and Mr. Pallone will if they come. And then 5-minute statements from the witnesses and questions from the members.

Okay. First, I want to say a word or two about our good friend Ed Whitfield. Ed knows these issues. He knows about the policy. And above all, he wants the best for his home State of Kentucky.

Chairman Whitfield was a great steward for this committee. He was a mentor, a teacher, and he will be missed around here. And of course he helped get this ball rolling on this new series of hearings on the Federal Power Act. This should be a great opportunity for this committee. We can bring a new and much needed focus to today's power markets. We can see what works, what doesn't work, and find long-term solutions.

But before we take any next step we need to know how these markets developed. Back in 1996, FERC issued Order 888. In general, that required open access for transmission lines of our

Nation's utilities. And since that time, consumers of electricity have gained more competitive options beyond their local utility.

Today, at least for the wholesale markets, a large purchaser of electricity can not only purchase from the local utility, but that consumer can purchase power at wholesale from a neighboring utility or an independent power producer or any number of competitive suppliers. Texans, and those at half other States, can even pick their retail electric electricity provider. All these options to choose an electric supplier were designed to keep costs down for consumers everywhere by checking the prices charged by utilities.

Yet the markets by no means are perfect. Some people still object to subsidies and tax breaks granted to a few types of power sellers. Others complain that certain power plants generate too much pollution, even if their power helps pay lower bills for their users. The owners of power plants object that the markets don't always establish the right prices. They say prices can be artificially low at times of high demand. Not because prices should be low during high demand but because the organizations running the markets are too sensitive to political pressures.

We won't solve the serious problems facing our market this morning. We won't sort out the difference between the real properties and the empty allegations today either. Rather, this

hearing will set the stage for our work on all of these topics in the future. To set this stage, we have gathered four witnesses today who have deep experience in the development of the markets. They were in the markets in senior policymaking positions when the key decisions were made on how these markets would roll out. Two were former counsel generals at FERC. One was a FERC commissioner. And one was a senior official with the Department of Energy. They have a valuable perspective to offer this committee. I look forward to today's hearing.

And with that I yield to my friend from California, Mr. McNerney, for 5 minutes.

[The prepared statement of Mr. Olson follows:]

******** COMMITTEE INSERT ********

Mr. McNerney. Well, I thank the chairman for holding this important hearing on the Historical Perspective of the Federal Power Act.

Mr. Chairman, it is clearly important to give members the opportunity to review some of the thinking and reasoning that went into the laws that we do have today. Considering all the latest and ongoing developments that the grid now faces, it is worthwhile to hear from prominent stakeholders who can provide historical and current analysis from legislative, administrative, and judicial perspectives.

The Federal Power Commission, and later the Federal Energy Regulatory Commission, played a significant role in providing the regulatory structure that provided a balance between competition and public interest to help make the United States a leader in the generation of distributed public and affordable energy. This subcommittee played a significant role in enacting the policies that led to those agencies and to how the current grid is structured.

It is time to consider what changes, if any, are needed to meet the challenges of today. Mr. Chairman, new technology is bringing about fundamental changes in how and where we produce and deliver electricity to consumers. This provides policymakers with both challenges and opportunities for establishing a modernized

electric grid. Exciting developments such as the emergence of renewables and cheap natural gas, distributed power system, demand-side management, improved energy storage, local and regional micro grids, electric vehicles, rooftop solar, and high speed switching technology must now be incorporated into a modern, efficient, and reliable grid.

Today's hearing will provide additional insight into what this modern grid should look like, how it should be regulated, and what entities should have what authorities. The fact of the matter is that with the current regulatory framework established back in 1935 with the Federal Power Act may no longer be suitable as the bright line distinguishing Federal and State regulations of the electric power grid.

The dividing line giving Federal regulators exclusive authority over the wholesale electric sales and interstate commerce and relegating retail sales to State regulators may in fact need to be updated to account for the current realities of today's grid operations. Just as the grid has changed, policymakers may need to consider a new regulatory structure that takes into account State-by-State decisionmaking processes for issues such as permit siting, demand response, blended fuel sources, and net metering policies.

Mr. Chairman, I believe today's hearing is a great first step

into examining these issues and in gaining valuable insight into how we got here in the first place. I hope today's bipartisan hearing, one of the first of its kind, can be a model for future legislative hearings that may ultimately lead to a consensus approach to addressing essential challenges that the Congress must additionally address: What should a 21st century grid look like. Once against, Mr. Chairman, thank you for holding this timely hearing. And I yield the balance of my time.

[The prepared statement of Mr. McNerney follows:]

******** COMMITTEE INSERT ********

Mr. Olson. The gentlemen yields back. I have heard Chairman Upton will not be here on our side. Anybody want to take some time? His time? Going, going, gone.

We recognize the ranking member of the full committee, Mr. Pallone, from New Jersey for 5 minutes, opening statement.

Mr. Pallone. We are going to have an auction on the other side for the time.

I want to thank Mr. Olson as the chair of the committee now, and also thank Mr. Whitfield for his service to the subcommittee. Thank you for holding this important hearing to provide us with a historical perspective on how our system of electricity regulation has evolved over the past three decades.

The Energy and Power Subcommittee was the first subcommittee where I had the privilege to serve as ranking member opposite the late Chairman Dan Schaefer of Colorado. And I mention this today because today's hearing is about historical perspectives on the Federal Power Act and because there was a time, beginning with Chairman Phil Sharp, when this subcommittee focused an enormous amount of its time on electric utility restructuring.

In my two years as subcommittee ranking member, Chairman Schaefer held what seemed to be almost weekly hearings on electricity. And these hearings focused on the vision of a national mandate for retail competition as well as overseeing the

Federal Energy Regulatory Commission or FERC's development of wholesale electric competition. And Chairman Barton then continued the subcommittee's focus on the electric utility sector and the development of regional wholesale markets that led to the Energy Policy Act of 2005. And that law included critical structural and regulatory changes that modernized and solidified the regional system that we have today.

Since that time, the subcommittee has turned its attention to other issues. However, new developments in the electricity sector and the regional markets, both promising and concerning, require us to return again to a serious assessment of the state of the electric sector and how it is regulated. For one thing, technology has dramatically transformed the possibilities for cost effective generating and efficiently delivering electric energy to homes, businesses, and manufacturing facilities. Today this can all be done from a variety of sources. For example, distributed generation, both fossil and renewable based, along with improving storage options, smart meters, micro grids, and other technologies, have altered the possibilities for effectively and economically ensuring reliability. And this has called into question even the most basic tenets of rate making.

At the same time, these technological and market changes have challenged the longstanding and financial models for utilities,

and the economic viability of many large nuclear and coal-fired facilities. Beyond technological transformation, recent decisions by the Supreme Court have also called into question many of our past assumptions about electric sector regulation. One example of that is the court's decision earlier this yearly in the FERC versus Electric Power Supply Association case. This decision provided for markets where conservation and efficiency could be sold at wholesale alongside electric power. It has also upended traditional views of what constitutes sales of wholesale or retail and what is within the purview of the Federal Government and FERC as opposed to State governments and their public utility commissions. And these are enormous and complex matters that are important and should be examined by Congress and specifically this committee.

We need to begin exploring what types of changes if any need to be made to the Federal Power Act or whether some of the technological and legal developments I have discussed have made the act itself obsolete. And these are legitimate questions that we should be exploring. And while we represent different parties and philosophies as well as different States and regions, it is critical that our committee spend significant time examining these matters so that we arrive at decisions that are informed by fact.

Again I will say, Mr. Chairman, it is an important hearing

because we have worked in a bipartisan fashion to bring together some of the best minds and public servants in the area of electricity. These are not just academic experts. They are people who played significant roles at key moments in the development of our modern electric regulatory regime. And again I want to commend Chairman Upton, you, Mr. Chairman Olson, and of course our Ranking Member Rush for not only holding this hearing but doing so in a thoughtful, collaborative, and serious manner that this subject deserves.

And I am grateful to our witnesses who include a former FERC commissioner, former general counsels, and the former deputy Energy secretary, all of whom continue to be well-respected experts in this field, for helping begin this effort to understand and assess the evolution of the electric sector.

I yield back unless somebody wants my time on our side. I don't think so. Thank you.

[The prepared statement of Mr. Pallone follows:]

******** COMMITTEE INSERT ********

Mr. Olson. The gentleman yields back. And now it is the fun time.

Our four witnesses will speak for 5-minute testimony. We are starting from my left to my right. No politics involved. That is just how we do that. Our first witness will be Mr. Doug Smith. Doug was a former general counsel at FERC from 1997 to 2001, and now is a partner at Van Ness and Feldman LLP. Mr. Smith.

STATEMENTS OF DOUG SMITH, FORMER GENERAL COUNSEL, FEDERAL ENERGY REGULATORY COMMISSION, PARTNER, VAN NESS FELDMAN, LLP; CLIFFORD M. ("MIKE") NAEVE, FORMER COMMISSIONER, FEDERAL ENERGY REGULATORY COMMISSION, PARTNER, SKADDEN, ARPS, SLATE, MEAGHER, & FLOM LLP; LINDA STUNTZ, DEPUTY SECRETARY, U.S. DEPARTMENT OF ENERGY, PARTNER, STUNTZ, DAVIS & STAFFIER, P.C.; AND SUSAN TOMASKY, FORMER GENERAL COUNSEL, FEDERAL ENERGY REGULATORY COMMISSION, FORMER PRESIDENT-AEP TRANSMISSION OF AMERICAN ELECTRIC POWER CORPORATION

STATEMENT OF DOUG SMITH

Mr. Smith. Good morning. My name is Doug Smith. I am a partner at Van Ness Feldman. I did serve at both FERC and the Department of Energy before I was at Van Ness. But the views I am going to express today are my own, not those of my employers, past

employers, clients, colleagues, or anybody else.

I have been asked today to provide a brief review of the legal history of the Federal Power Act, and to address particularly the relationship between Federal and State regulatory responsibilities as shaped by that act. When utility regulation got started in the early 1900s, it was States that comprehensively regulated electric utilities. There wasn't a Federal role. But in 1927 there was a Supreme Court decision called Attleboro in which the Supreme Court found that the U.S. Constitution put some utility activities beyond the reach of State regulation.

In particular, the court held that the dormant commerce clause prevented Rhode Island from regulating the rates charged by a Rhode Island utility to a utility in neighboring Massachusetts. This constitutional limitation was referred to as the Attleboro gap. In 1935 Congress moved to fill that gap by enacting what is now part two of the Federal Power Act.

Part two authorized the Federal Power Commission, the predecessor of the Federal Energy Regulatory Commission, to regulate two categories of transactions; wholesale sales of electricity in interstate commerce, and transmission of electricity in interstate commerce. And sections 205 and 206 of the Federal Power Act require that the rates, terms, and conditions for such wholesale sales and transmission must be just

and reasonable, and must not be unduly discriminatory or preferential. And those standards enacted in 1935 remain in place today and are the foundation for much of what FERC has done in the intervening years.

Importantly, the Federal Power Act expressly provides that the commission does not have jurisdiction over retail sales, generation, and local distribution, reserving those areas of activity to State regulation. In 1964, the Supreme Court, in a case called Colton, described this division of labor in the Federal Power Act as a bright line easily ascertained. As we might see from today's discussion, it may not be quite so bright or easily ascertained anymore.

In 1935, and for several decades thereafter, the electric utility business model was a vertically integrated utility principally focused on serving their own retail customers, not wholesale sales, not transmission for third parties. But that industry structure and the related regulatory structure started to change in the late 1970s, moving towards increased competition in generation.

In 1978, Congress enacted the Public Utility Regulatory Policies Act, a provision of which section 210 enabled non-utilities to own and operate certain cogeneration and renewable generation facilities, really providing a first step

into competitive generation.

In the Energy Policy Act of 1992, Congress further opened the door to independent power production by authorizing FERC to require transmission owning utilities to provide wheeling service on case-by-case basis. And by reforming PUHCA, the Public Utility Holding Company Act, to provide for exempt wholesale generators, which allowed IPPs to avoid the most significant regulatory obstacles created by PUHCA.

And on that basis, the next steps were really taken by FERC as an administrative agency. Under sections 205 and 206 it authorized sellers to make wholesale sales at market-based rates if the seller could show that it did not have market power. It issued its landmark ruling on transmission open access, order number 888, and it moved further to promote formation of regional transmission organizations.

In the Energy Policy Act of 2005, Congress again amended the Federal Power Act, responding in part to perceived regulatory problems that were highlighted by the California electricity crisis by, for instance, imposing a statutory ban on market manipulation, raising the civil penalties under the act to $1 million per day, providing for mandatory reliability standards for the first time, and adopting policies that were intended to support transmission investment, some of which were successful and

some less so.

But all these changes from PURPA on, that I have listed, were intended to promote competitive wholesale markets. The questions about the boundary between Federal and State regulatory jurisdiction continue to arise. Just this year the Supreme Court was presented with two such questions. In a case called FERC v. EPSA, the court held that regulation of the price that demand response receives in an organized wholesale energy market is a proper subject for FERC regulation, and was not an impermissible intrusion on State authority to regulate retail sales.

And in a case called Hughes, the court held that a Maryland State program to support development of instate generation that was directly linked to FERC regulated wholesale capacity markets was preempted. Further, technology and market changes such as expanded use of distributed generation, micro grids, energy storage, and plug in electric vehicles will continue to present questions about the proper roles for Federal and State regulatory authority.

I look forward to your questions.

[The prepared statement of Mr. Smith follows:]

******** INSERT 1-1 ********

Mr. Olson. Thank you. I recognize now Mr. Naeve.

Mr. Naeve was a former commissioner of the FERC. He is currently a partner at Skadden, Arps, Slate, Meagher & Flom LLP. And he wants to be called Mike. So, Mike, you have 5 minutes.

STATEMENT OF CLIFFORD M. NAEVE

Mr. Naeve. Thank you very much, Mr. Chairman, members of the committee. We're focussing today --

Mr. Olson. Mike. Mike.

Mr. Naeve. All right. Thank you.

We Are focusing today on the evolution of power markets.

Mr. Shimkus. Sir, you need to pull that closer to you also. Just as close as you can.

Mr. Naeve. How's that?

Mr. Shimkus. It doesn't sound like it is on. Is that light on?

Mr. Naeve. It is. I will try to speak louder. Does that work?

Mr. Shimkus. And we need it for our transcribers. That is really the most important thing.

Mr. Naeve. Is that better? Okay. Thank you.

We are focusing today on the evolution of electric power

markets. When I was on the commission, in effect, those markets did not exist. So I would like to describe how they came into being. And you really can't discuss the evolution of electric power markets until you first discuss the evolution of natural gas markets. Because FERC cut its teeth bringing competition to the natural gas industry, and then later applied those lessons to the power industry.

In the mid 1980s when I served on the commission, we had a strange phenomenon. We had gas surpluses and rising prices. Now, how does that happen with a surplus and rising prices? You have to go back actually to the mid 1970s. In the mid 1970s the Nation was confronted with severe natural gas shortages, at least in the interstate markets. In the unregulated intrastate markets, which constituted about 40 percent of the gas sales, supplies were plentiful. Prices were a little bit higher but supplies were plentiful. But in the interstate markets, which were regulated at the time by the Federal Power Commission, which was the predecessor to FERC, prices were set much lower and they weren't sufficiently high to attract new supply. So we had shortages.

So in response to that, Congress passed the Natural Gas Policy Act. And what Congress did in the Natural Gas Policy Act, is it basically substituted itself for the Federal Power Commission, and the later FERC, in establishing prices. And where

the Federal Power Commission had set prices too low, Congress in effect set prices too high. It specifically dictated prices. They were inflation adjusted prices. And in response to those prices, those higher prices, gas producers began to drill again and sell into the interstate market. And we created a surplus. But even though we had a surplus, we had rising prices. And the reason for the rising prices was because we had rigid market structure. We had very long-term contracts. We had obligations to purchase that had all been entered into at a time when there was pervasive regulation. And that rigid structure of those rigid contracts caused prices to increase, notwithstanding the surplus supplies.

So when I joined the commission, we were faced with a dilemma. How do we address this perplexing problem. We began to ask ourselves why are we even regulating gas production. We regulate natural monopolies. But there is nothing about gas production that appeared to look like a natural monopoly. There were 12,000, at the time, 12,000 natural gas production companies. That looked like plenty of companies to produce robust competition. So we concluded that to get the right prices so that prices would rise when there was a shortage, prices would fall when there is a surplus, the normal workings of the market, we needed to introduce competition into the marketplace.

So that was a decision made by FERC that they were going to attempt to do that. It wasn't so easy, though, as to just simply pull back from the market. The market itself was structured, as I previously mentioned, in a response to pervasive historic regulation. So the commission actually had to begin to restructure the market so that competition could take root. So among the other things that I had to do, first they had to make sure that suppliers could reach their customers. And in those days, pipelines only carried the gas that they themselves owned. They wouldn't carry gas for competitors. So we had to require pipelines to carry their competitors' gas, open access on the pipeline system. That was the first step. We had to free gas supplies from pervasive regulation.

The FPC had set prices, the Natural Gas Policy Act had set prices. We had to find a way to allow prices to float up and down with the market. And we worked on that and then later the Wellhead Deregulation Act helped us further on that. But we had to let prices float. We had to make sure that pipelines couldn't compete against -- excuse me -- couldn't favor their own supplies when they transported gas over supplies from their competitors. So we had to develop a series of rules to prevent favoritism.

And then finally we had to free up the supply. Because as strange as it may sound, back in 1983, 1984, 1985, if a producer

made a sale to an interstate pipeline under a 5-year contract or a 10-year contract, and if that contract expired, the commission nonetheless required that producer to continue to sell in perpetuity to that same pipeline for the same price. So we had gas supplies -- gas contracts that had been entered into in 1950s for 16 cents and 17 cents. And they were being told that even though those contracts had expired 20 years earlier, they had to continue to deliver supplies to the interstate market at those prices.

So we had to find a way to allow those prices to be -- those supplies to be freed up and so they could go to the parts of the country where the supply was needed the most at a market price. So those were changes that had to be made in the structure of the industry before competition could even be made to work.

It is amazing that FERC was able to kind of take all of those steps under the Natural Gas Act. The Natural Gas Act was passed in 1938, just 3 years after the Federal Power Act. It was largely structured after the Federal Power Act. Very, very similar. FERC was to set just and reasonable rates. Well, FERC used that power to set just and reasonable rates to require or permit market-based rates. So they concluded that if we can show there is enough competition, then market competition can set just and reasonable rates. And the courts agreed with that determination. FERC used

the power in that statute that said you have to prevent undue discrimination. They used that power to order open access transportation.

So it was a broadly written statute written in very broad strokes that gave FERC the ability to fill in between the lines as the market changed, as conditions changed. And it turned out to be a very powerful and lasting statute. We will get to this in a second. But the Federal Power Act is very similar to that. It gives FERC very broad powers. And it has lasted, you know, more than 85 years.

So after FERC had great success in deregulating the Natural Gas Act, and today we have a very thriving industry, it is largely because of the work that FERC did, they turned their attention to the Federal Power Act and to the power industry. And they concluded maybe we should be doing the same thing here as we had accomplished in the gas industry. After all, generation doesn't look, again, like a natural monopoly business. Why not permit competition for generation like we permitted competition for gas production. By that time, PURPA had been passed. We had an independent power industry. There wasn't much competition. The PURPA generators signed up under long-term contracts and their supplies were locked in. So there wasn't a tremendous amount of competition. And their prices were set by regulators, not by the

market. But nonetheless, we did know that an independent power industry could stand alone on its own. So the commission then set about trying to deregulate the power industry.

Initially they tried to apply the same model that they had applied to the natural gas industry. Let's require open access transportation. If we can show adequate competitions, let's let the market set the price, not set the price ourselves through cost of service type regulation. Let's prevent favoritism in transmission service by transmission owners and so forth.

So that was the initial approach. And that approach was a very good start. But there were major differences between the power industry and the gas industry which frankly made it much more difficult to implement competition in the power industry. So let's talk about some of those major differences. The first is the statutory framework.

I am sorry?

Mr. Olson. I am sorry, sir, I know it didn't occur to you about the microphones, but you are about 4 minutes over. So wrap up quickly.

Mr. Naeve. Oh, okay. All right. Well, let me just say there are very, very significant differences between the two industries that make competition and the implementation of competition more difficult. Power doesn't flow in a straight line

like gas through a pipeline. That makes it harder. Reliability is much more difficult to impose in the power industry because supply and demand have to be a perfect balance minute to minute. There are structural differences in the industry and shared jurisdiction and so forth. And I will be happy to respond in the Q and A session to some of those issues.

[The prepared statement of Mr. Naeve follows:]

******** INSERT 1-2 ********

Mr. Olson. Thank you, sir.

Our next witness will be Mrs. Susan Tomasky. Susan was a former counsel general at FERC. After that she was the president of the Transmission of American Electric Power Corporation. And she will talk about order number 888. Five minutes, Ms. Tomasky, please.

STATEMENT OF SUSAN TOMASKY

Ms. Tomasky. Yes, sir. Good morning, Mr. Chairman, Mr. Pallone, and members of the committee. Thank you so much for the opportunity to actually come back before this committee after many years to talk about the history of electric supply competition in the United States.

I would like to start by first explaining that, from my perspective anyway, order 888 was very much the product of changing market conditions that FERC observed at the time, as well as the regulatory model that it had previously seen with respect to natural gas. Really, for most of the 20th century, from a customer perspective, electric service wasn't very complicated. People paid a bill. That bill was, for the most part, regulated by State commissions, and they paid a single bundled rate. And behind all that was a complicated set of assets; transmission,

distribution, generation. That was all priced on a cost-of-service basis. The State figured out the bill, the utility charged it, and the customer turned the lights off and we hope, in the utility industry, in most instances paid for the bill. However, in the 1990s we saw an extraordinary escalation of the price of electricity in many parts of the country. And that was due largely to the decision of utilities that really had a lot to do with securing power supply to build large nuclear generation facilities. There was significant cost escalation associated with that. And as a result, customers resisted that. They resisted it in State regulatory proceedings, but they also resisted it by trying to escape from the regulatory regimes that were in place in that time and find alternative suppliers.

In the early days, the alternative supply market was pretty thin. But as it became pretty clear that the opportunity was available, technology improved, capital was available, but customers were still bound to their utilities under existing regulatory rules. And even if they could escape those, they didn't have the ability to get power from the independent generator to the transmission because they didn't have access across the utilities monopoly transmission system.

At that point FERC began to face a number of case-by-case requests to address this for individual customers, to make

market-based rates available, and the commission did begin to respond to that. But ultimately came to the conclusion that not only was it a slow process, but it created uncertainty and risks for both the utility industry and all parties, and in the end only benefitted a handful of customers. And, really, it was to address these issues more broadly and systematically that the commission undertook the rulemakings in order 888.

At the heart of the commission's action was the conviction that electricity customers would benefit from power prices if they were determined on the basis of efficient competitive marketplace rather than through a utility-driven process that was overseen by regulators and paid for by States on the basis of the utility's cost. To accomplish this, as Mr. Naeve said, they did turn to the model of the natural gas industry. They ordered the separation of wholesale sales from transmission service. And that helped to create a distinct transparent power supply market. They also provided a relatively simple path for market-based rates for both utility and non-utility sellers. And then they continued to regulate the transmission business as a monopoly business but under a new set of standards that required terms for the utilities to provide open access service to both non-utility service users and to themselves on essentially the same terms.

So the question is how are things working. And in my view,

we have had some very painful learning lessons along the way. But the competitive markets that do exist are working fairly effectively. We have a large number of suppliers. And capital is generally available to support new investment when it's justified. And I think equally important, when markets are permitted to work, capital doesn't flow to projects that aren't justified. That is the market discipline, and it directly benefits customers. In recent years we have seen price declines that pass through to customers. And we also have seen price increases that pass through to customers.

I am sorry. Is there something wrong? No. Okay.

These are good things. These are price signals that go to the marketplace. They prompt generation and in transmission development. And those are the operation of a properly functioning market. There are winners and losers. Some generators are not effective competitors. Others are. And of course there are external factors that affect this. But generally I would have to say that the outcome is that the customer isn't at risk when these risks are assumed by the generators. And that is pretty much the vision that the commission had of the competitive marketplace.

This committee, I know, is going to be looking at significant challenges. I would be happy to discuss any of those in my

comments if you like, but that concludes my testimony. Thank you.

[The statement of Ms. Tomasky follows:]

******** INSERT 1-3 ********

Mr. Olson. Thank you very much. Our final witness is Ms. Linda Stuntz. And Ms. Linda Stuntz was the former deputy secretary of Energy from 1992 to 1993. And she is currently a named partner at Stuntz, Davis and Staffier, P.C.

Five minutes, please, ma'am.

Mr. Barton. And a former staffer of this committee.

Mr. Olson. I apologize.

STATEMENT OF LINDA STUNTZ

Ms. Stuntz. Thank you, Mr. Barton and Mr. Chairman. It is an honor to be before you today, to be back. As you have heard, part two of the Federal Power Act was enacted in 1935 to fill a regulatory gap. It provides the Federal Power Commission, now FERC, with the ability to regulate what the States could not. The States retained authority over generation, intrastate transmission, local distribution, and retail sales of electricity. Interestingly, it is a challenge. None of those things is self-defining, of course. And a lot of what we at this table have done over many, many years is try and flesh out what those terms mean.

As the economy has grown, and not to repeat what some of my colleagues have said before, and as electricity markets and

industry structure have evolved, Federal jurisdiction under the Federal Power Act has expanded. The gap-filling function has how become much more a blanket. Wholesale markets for electricity administered by RTOs and ISOs now provide power across much but not all, and that is an important -- not all of the country. I included in my testimony a chart, I think on page 5, that reveals that. It is about two-thirds of all customers. The restructuring of the electric industry was driven by multiple factors. And as Mr. Pallone mentioned, I think sat through a lot of those hearings, you have heard some of these, but let me just tick them off.

Clearly PURPA sort of established the principle that generation could be competitive. It didn't need to be provided by utility suppliers under cost of service regulation. And yes there were rate shocks in some parts of the country. In part because of over-budget nuclear plants, in part because of general inflation and the price of oil and so forth where oil was used in the Northeast. But there was also, I think, a favorable experience with oil and natural gas deregulation, as you have heard from Mr. Naeve, which drove a desire to rely more on market forces and markets rather than cost of service utility regulation, to better protect consumers and to encourage innovation.

Finally, even back then there was technology development.

And I think this is often overlooked. But the simple adaptation of the aero derivatives, sort of jet engine, to be able to be used to supply electricity from natural gas-fired turbines was huge. Because this was a lower capital cost. It could be built more quickly. It could be almost modular. And in the 1990s this became a source of tension. And there may be important lessons there as you look at technology developments today.

Electric restructuring has taken many different forms across the country, as many of you know based on your own experiences with the States. But as Mr. Smith observed, the Supreme Court decisions earlier this year confirmed that FERC jurisdiction under the FPA now extends to the purchase of demand management resources, energy efficiency, if you will, by RTOs and ISOs, and that States may not act in a way that a just and interstate wholesale rate, even if the State is acting in a way that it believes is necessary to secure supply generation adequacy.

Other pending State initiatives known well to many of you, ranging from support for nuclear power to perhaps coal plants in Ohio, are likely to raise similar questions in the future and likely to be equally difficult. One thing that has not changed, and here is where the lawyer is going to play engineer if you will forgive me for just a minute, one thing that has not changed since passage of the FPA is that electricity cannot be stored in

meaningful amounts, despite very considerable current efforts to change that. This simple fact has very large consequences because demand for electricity varies greatly over the course of a day and over the course of the year.

What this means is that -- and yet at the same time supply and demand have to be balanced perfectly in order to preserve reliability in real time. Doing this is becoming more challenging as intermittent resources such as wind and solar play bigger roles. Reserve margins are no longer sufficient to ensure reliability. We need new planning paradigms. And again, I put a chart in my testimony, the famous duck curve, on page 12, which shows a sort of extreme version of this. But those of you from Texas are already seeing this. In other places, Colorado, where there have been significant penetration of renewable resources.

And finally with great respect to Mr. Pallone, there is no such thing as the grid. North America is actually made up of four separate networks, if you will. The western interconnection, the eastern interconnection, ERCOT, most of Texas, and Quebec. There are only weak direct current ties between these two. We can talk more about why that exists and whether it is a good idea. Certainly there is a lot of history there. But again, that has meaning because it affects the jurisdictional status of the folks in Texas.

And in addition, there are some 500, more or less, it changes almost every day, transmission owners in the U.S., ranging from TVA, the PMAs, to co-ops to large industrial and utilities. Each of these is regulated differently, each with greater or less FERC involvement. In all cases that I know of, States do the siting. So you have to -- it is unlike natural gas which has Federal eminent domain, you don't have that to site electric transmission. This complexity creates major challenges for initiatives to change the way that the grid in this country is upgraded, operated, paid for, and constructed.

With that, let me conclude my oral statement. And I welcome your questions.

[The prepared statement of Ms. Stuntz follows:]

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Mr. Olson. Thank you, Mrs. Stuntz. And I will yield myself 5 minutes for a round of questions.

This hearing is called, again, the title was the Federal Power Act: Historical Perspectives. The subtitle, I think, could be: Those who forget the lessons of history are doomed to repeat them.

I would like to start with you, Mrs. Stuntz, and open this to the panel.

Mike is on me right? Curve ball from up on stage here.

Early in the course of the electrical restructuring efforts at FERC, Congress and this committee were fairly active on the topic. We kept our oversight and passed significant legislation. Overall, Mrs. Stuntz, for you, and then work down the panel, were these efforts of this committee helpful in guiding FERC in improving efficiency in markets? Yes? No? Lessons learned?

Ms. Stuntz. Absolutely yes. And as the one person here who never worked at FERC, I guess, but I worked closely with this committee both as a staffer but then particularly in the 199s Energy Policy Act, which probably gets insufficient appreciation in my view, for its role of contributing to generation competition. And the oversight and the guidance provided by that committee, and I know Mr. Barton remembers that well, and Mr. Schaefer, I think, was critical in setting a path which FERC then

went beyond. But in 2005 as well, this committee was very important.

Mr. Olson. Ms. Tomasky, in your comments you mention a painful experience. Do you want to elaborate on that how we don't repeat a painful experience? Your comments on oversight by this committee with FERC and this issue.

Ms. Tomasky. Well, sir, and I am sure Mr. McNerney would agree that the most painful experience was the experience of the California marketplace. And there are some really important lessons from that, I think. I will say that one of the things FERC didn't do when it moved to competition was require states to do exactly as FERC was doing and didn't mandate unbundling.

But some States like California did take the lead in moving forward. And their markets today, I want to say, it ends as a good story, their markets work very effectively as part of a competitive market. California was plagued with a lot of issues. One of the most significant of course was that the markets were new. The regulations were new. And there was a lot of market manipulation that led to unfortunate circumstances. There also were extraordinary supply problems. And California did a good job under tough circumstances of responding with efficiency initiatives and things like that that we have also learned from.

I think the most important thing that we have all learned

from these experiences is that while we have a vision of electricity as a commodity, we have to always remember that to society as a whole, it is an essential service. And we all have to figure out how to come together when there is a crisis, when there is an outage, when things aren't working right, to acknowledge that. Because it has to work. And I think that to me is the most significant lesson of these painful experiences. Thank you.

Mr. Olson. Thank you, ma'am. Mr. Naeve, you were a FERC commissioner. Did we help you or hurt you back in the old days?

Mr. Naeve. I think the oversight of the committee and the legislation passed by the committee with respect to the power industry has been helpful. I think, for example, both of the prior witnesses mentioned the Energy Policy Act of 1992. That act was very important if for no other reason it eliminated some of the restrictions under the Public Utility Holding Company Act.

The independent power industry was being held back by the Public Utility Holding Company Act. If you owned a generator -- generators were considered utilities. If you owned a generator, you were a utility holding company. There are a lot of restrictions on utility holding companies. In some ways they are a shared jurisdiction with the SEC and FERC over in this area.

Mr. Naeve. And it eliminated to some extent the restrictions on generation ownership through EWGs and the creation of EWGs. That was very helpful. The Energy Policy Act of 2005 finally repealed the 1935 act. That was extremely helpful as well. So that gave FERC more or less exclusive Federal jurisdiction in this area. And the 1935 act had itself served its usefulness and its purpose and was no longer needed. So that was also very helpful.

Granting FERC greater enforcement authority and powers was very helpful again. If one thinks backs about it, FERC was really a cost-of-service regulator with engineers and accountants and that sort of stuff. And once we had competition, the model changed. And FERC, now their role is to preserve competition. So they need new resources and new powers, and that statute give it to them. Also you gave FERC more jurisdiction over certain entities that previously -- over their transmission systems that they previously didn't have. So that was also very helpful.

But I want to add -- I am sorry. Let me add one thing. Notwithstanding all those important changes, the Federal Power Act, as I mentioned, like the Natural Gas Act, is very broadly written. And it is written in a way that has given FERC the flexibility to adapt to changing conditions. So it is a very

useful statute. And it has served well over the 85 years that is has been there.

So thank you.

Mr. Olson. Thank you. Mr. Smith, how did this committee help or hurt restructuring about a decade ago?

Mr. Smith. Well, I will endorse the comments of my colleagues about the 1992 act and some of the core provisions in the 2005 act. In addition, I think it is important that the reliability provisions in the 2005 act were enacted. There was concern that as the market got more competitive, moved away from cost-of-service rates, that spending on things, that promote reliability might decline when all of a sudden that couldn't necessarily be recovered directly from ratepayers.

So the conversion of what had been up until then essentially a voluntary industry program of reliability standards into a regulatory program was important. The 2005 act also made important policy changes on transmission development, some of which worked and some of which didn't work. So, for instance, the Congress directed FERC to provide for incentive rate treatments for new transmission investment. And I think overall that has been quite successful at getting the industry focused on deploying capital to needed transmission investments.

There were provisions that you might recall on backstop

transmission siting which I would say have had no effect on easing the problems of transmission siting at all. So it's a mixed bag on that front.

Mr. Olson. And my time has expired. I now yield time to the ranking member from California, Mr. McNerney, and you will have 6 minutes and 17 seconds per my example. Bipartisanship.

Mr. McNerney. You know, I really appreciate the sort of bipartisan sheen that this hearing has so far. So thank you for that, Mr. Chairman.

Ms. Stuntz, you mentioned technology developments had a large impact. And you cited the jet engine adaption. It seems to me that technology is changing at a very rapid pace now. And I think that is going to have a large impact on the way we have to structure this thing. How do you feel about that?

Ms. Stuntz. I agree absolutely both at sort of the utilities level but also the whole rise of distributed generation, is this going to cause a whole new business model, who will be in charge, are we going to end up with RTO-type entities at the distribution level the way we have at the transmission level? You know, New York is sort of probing that. You know, it is not at all clear whether that is the right answer.

But yes, it is forcing a change. And there are real questions, interesting questions, about whether regulators can

keep up with the pace of technology and what happens if they don't and --

Mr. McNerney. Not to mention that the legislators keeping up is even more of a challenge. Thank you.

This leads into my next question. Mike, you mentioned a lot of stuff that the I think the FERC was able to do -- or not the FERC but the power commission was able to do before FERC on natural gas based on the Natural Gas Act. Were there a lot of court challenges in that time? And if not, has the current sort of legal ecosystem changed enough that we have to worry significantly about that today?

Mr. Naeve. Certainly not with respect to natural gas. We don't need to worry about that. There were court challenges. And as a general rule, the commission did very well in those court challenges. The courts accepted the proposition that if there is adequate competition, competition can set just and reasonable rates. The courts accepted the proposition that to prevent undue discrimination you have to require the pipelines, if they are going to carry their supplies for themselves or more specific customers, they have to carry supplies for everybody.

So the courts as a general rule were very supportive. And at times the courts actually led the commission. There was a famous case, the Maryland People's Counsel case in which the court turned

down a proposal that FERC had approved because it provided transportation for only a certain class of customers and not for all customers. So I think that educated FERC that they had the power to go out and require transportation for all customers. So as a general rule, I think the statutory boundaries today in the gas industry are more than adequate. They are very robust.

Mr. McNerney. Thank you.

Mr. Smith, you mentioned that some of the legislation in more recent years had some problems in it and some successes. How hard was it to overcome the problems that legislation introduced?

Mr. Smith. Well, the particular example I was giving was about backstop transmission siting. So transmission siting is fundamentally a function at the State level. The 2005 act attempted to provide a means through a combination of actions by the Department of Energy and then the Federal Energy Regulatory Commission for transmission developers to be able to go to FERC to get certificates to develop transmission if they couldn't get State approvals. And for a variety of reasons, including a couple of court of appeals cases, that authority hasn't gotten used.

So in the absence of that, transmission developers are going to the individual States in which the transmission is located and working through those State processes. And if they need to -- if there are disputes about that, they get litigated in the State

courts instead of through a Federal system.

Mr. McNerney. Thank you.

We talked about technology a minute ago. Cyber issues are a big part of that. Is that something that we are going to be able to take specific language out or should we leave that to the regulators, the cybersecurity and cyber protections?

Ms. Stuntz. The part -- because of this committee, and I remember it was Mr. Boucher was involved in 2005 when it set up the reliability framework, it expressly granted sort of FERC the ability to monitor cyber as part of -- and to promulgate reliability standards on the subject of cyber. So under FERC's direction North American Electric Reliability Corporation or NERC and its regional entities have been embarked on on doing that. It is a tough enterprise, very challenging enterprise.

You can never be complacent about it. They are up to like critical infrastructure protection standards five or six now, I think. But it is certainly something that bears look because it doesn't respect jurisdictional lines or the law, for that matter, and it will affect the weakest link of the systems.

Ms. Tomasky. I would add to that. I would agree with it. And I would say that the focus of legislators on this issue is an extremely important one. It is very difficult, and I share my experience as a member of a board, of an electric utility, it is

very difficult, and it is not appropriate, I think, to get into the weeds of a lot of these issues. But the importance of it is significant. And what the committee did, what the Congress did, was to change the governance structure and essentially direct FERC to make sure that utilities were focusing on it in a systemic way.

And having been involved in the implementation of these from the utility side, I can say that it was an extremely important refocusing of efforts. It is a very, very difficult and a constant area. I continue to urge you to oversee it.

Mr. McNerney. Thank you. Mr. Chairman, I yield back.

Mr. Olson. The gentleman yields back. And perfect 6 minutes and 17 seconds. Thank you, my friend.

The chair recognizes the chairman emeritus from a happy double overtime Texas Aggies, chairman emeritus, Joe Barton. For 5 minutes.

Mr. Barton. Well, let's wait until we see what happens with Alabama and LSU before we see how happy we are this year in Aggieland.

Well, thank you, Mr. Chairman and ranking member for holding this hearing. And thank you, panelists, for your excellent testimony. I have been on this committee for 30 years. So I have lived through most of what you folks talked about. And I would postulate that we have three basic requirements for our utility

system here in the United States. First and most important is we have to have an absolutely guaranteed adequate base load supply. If you don't have supply, the rest doesn't matter.

You saw that in California. The lady talked about the California market. They wouldn't let outside power bid into the system and they had $2,000 per megawatt hour charges. And the State of California, rightfully so, revolted against that. So we have to have an adequate base load supply. And it is difficult in the Northeast because the demand is not where the supply is.

Second, you have to have a transmission system that has adequate capacity to deliver that supply. In a large State like Texas, which as Mrs. Stuntz pointed out, we have ERCOT. So we basically have one entity that regulates the transmission system. So you don't have the interstate problems between States.

And finally, you have got to have a retail framework that the customers consider fair. And we have been all over the map on that the last 30 years. Again, what happened in California compared to States like Georgia, Mississippi where they have always had retail rates regulated by the State PUCs. And in my State of Texas, we have tried it both ways. We have gone from retail regulation to an open competitive system where in the home that I live in I routinely get five or six requests a month to switch power supply.

So this is a complicated issue. It is not an issue that any of us get any kudos for at our townhall meetings. You know, I have never had a question at a townhall meeting about an ISO or an RTO or any of the things that we have to do to make the system work.

So I am not sure where the committee is going to go based on this hearing. I think there is work to be done on a bipartisan basis if we want to. But this is a very complicated issue. And we have tried a number -- I mean, 1992, 2005. We tried to handle the interstate transmission siting issue. And we have yet to get that right. I thought we had it right in 2005, and the court struck it down two to one.

So I guess my question, since I am supposed to ask a question, you all are sitting here looking at me. Yeah, I could say: Don't you agree with what I just said. That would be not fair.

I am going to ask Mrs. Stuntz, which is something that hasn't come up yet, how do we interact between the Federal Power Act and the Clean Air Act? Because EPA more and more is usurping the decisions in providing power at adequate prices to the customers. The Clean Power Plan that has currently be stayed, if that is fully implemented, we are going to have base load supply problems in Texas in the next 4 or 5 years. So how would you interact

those two so that you get a fair balance between environmental protection and power availability?

RPTR HUMISTON

EDTR HUMKE

[11:04 a.m.]

Ms. Stuntz. Thank you, Mr. Barton. That is a really --

Mr. Barton. You have got 33 seconds to answer.

Ms. Stuntz. That is a really tough question and it is an important question, and it is one of the reasons why I commend you all for what you are doing today. Speaking strictly for myself, I have thought from the begin -- I have not understood from the beginning of the announcement of the clean power plan how that would -- how a plan that envisions individual States or potential regions adopting compliance plans on a rate or a mass basis is going to work on the back of a market base regional wholesale electric system.

I mean, the simplest way I could put it is if you are a State and you have a plan that depends on importing power from somewhere else, but they are not going to send it out anymore because they want the clean power, I mean, I don't know how it is going to work. And it leads to a bigger -- you know, maybe the bigger question is sort of do these markets adequately reflect -- you know, we want competitive markets that are based on marginal costs. Is that the value that we want now. If you want to

overlay on top of that environmental dispatch, which is really what we are doing now, but we are not putting a tax on carbon, we are doing something else, I foresee real difficulties. I can't fit them together. I don't know how that is going to work.

Mr. Barton. I thank the chairman. I thank the panel.

Mr. Olson. The gentleman yields back. The chair recognizes the ranking member of the full committee, Mr. Pallone, for 6 minutes and 11 seconds.

Mr. Pallone. Okay.

Mr. Olson. Following Chairman Barnes' example.

Mr. Pallone. I wanted to ask Ms. Stuntz, but then anyone else can answer as well, but in your testimony you raised a point regarding the Federal Power Act that I raised in my opening statement, and that is, you know, where you said, and I quote, "the Federal Power Act has weathered these changes, but whether it remains fit for purpose for the electricity industry in the 21st century is an important question to consider."

I honestly don't know whether the act has outlived its usefulness, but I think it is an important perspective to consider, particularly as I see not only the blurring of regulatory jurisdictions, but also the growth of technologies that really make me question whether traditional rate-making formulas are able to fairly value deployment of things like distributed

generation, micro grids, and storage.

So I just wanted to ask you, and again, I would like to hear from the other witnesses, this is my only question, whether we have come to a point in time where all these technological, legal, and other developments warrant us to conclude that the Federal Power Act has outlived its usefulness. I will start with you, and if anybody else wants to answer.

Ms. Stuntz. I will try to be very brief, because others, I am sure, have views. As Mr. Naeve said, that one of the strengths of the Federal Power Act is its breadth that has enabled regulators to accommodate a lot of developments, but fundamentally this Colton wholesale retail bright line, I think, is going to be challenged by things like distributed generation. I mean, we already -- you are seeing on the net metering sites, I mean, is that really the basis on which you want to decide whether the Federal or the State regulator has the ultimate say? And is that a distinction that even will make sense when, as in California now and some parts, you are seeing very large amounts given certain times, of generation coming on the system from the customer. So that may be an adaptation that is beyond the capability of the current FPA.

Mr. Pallone. All right. Thank you. Would the others like to -- go down the table there.

Ms. Tomasky. Sure. Mr. Pallone, I am not prepared to conclude that the basic framework of the power act is no longer useful. As Ms. Stuntz and others have said, it is pretty broad. And the competitive market design that we have today, I think, is very effective. I think that we have an inherent problem in its implementation that is pretty thorny and I don't have a good answer to, which is that we have a lot of different approaches, because one of the things FERC didn't do was to require retail and bundling and have a uniform system across the country, so you have got some States that have competition and others don't.

And the way it is relevant to the question of technology is that I do think that the States and the local -- which had the retail jurisdiction, they are going to be the testing ground and the proving ground for a lot of these new technologies, but ultimately their implementation needs to be on a much broader and regional scale. There really isn't a coincidence between the boundaries of the State jurisdiction and how a technology should operate and deploy in order to be efficient. We know that. That is why we have regional markets.

So I think it is probably fair to say that at the end of this inquiry, you would come to conclusions that changes to the power act need to be made, but I think it would be most useful to try to

understand what are the values in terms of generation power supply you are trying to accomplish, you know, where are you going to -- what technologies and how do you want to facilitate them, and then figure out how to change the boundaries under the Federal Power Act to make that effective.

Mr. Pallone. Thank you.

Mr. Naeve. I would add that it is very difficult to always anticipate the effects of new technologies or new developments. Often they have unintended consequences, the so-called duck curve that Ms. Stuntz mentioned is a good example of that.

So I would tend to prefer, as much like the Federal Power Act statutes, that are broadly written, that delegate broad authority to the experts and allow them the flexibility to adapt to changing market conditions as opposed to having Congress constantly passing new bills trying to catch up with yesterday's technology.

The Federal Power Act is one of those statutes. It gives FERC very broad authority. It could well be that they need additional authority in the future, but to say make rates just and reasonable, it doesn't tell them how to do it. It gives them a lot of flexibility to do it. It gives them a large amount of jurisdiction. I think some of these issues where they have deferred to the States, they probably have the power if they want to choose to assert jurisdiction over many of these issues, they

could probably do so.

So I think it is kind of -- I would take a wait-and-see approach, but it is a statute that has served well for a great many years, and the reason it has held up over that time is because it does paint with such a broad brush and delegate to the commission authority to be flexible.

Mr. Pallone. Thanks.

Mr. Smith. I would agree with the conclusion that I think I heard from my colleagues, which is that it hasn't outlived its usefulness, that the core provisions of the Federal Power Act should be kept in place and then adjusted as necessary as market changes or technology changes present problems where the answer doesn't make sense under the current allocation of responsibilities. And I think the best example of that is for most of the life of the Federal Power Act, generation was interconnected to the transmission system. And now that you have generation in little tiny chunks that is connected to the distribution system on one side or the other of the consumer meter and is often owned by a retail seller so that you have somebody -- I mean, retail customer who is both a buyer and a seller potentially, it leads to versions of this application of this bright line that were never anticipated when the act was written.

So in my mind, the way to deal with that is not to get rid of the Federal Power Act and start over again, but rather to -- if that becomes a problem that is not fixable under the current regime, to make adjustments for things like net metering, distributed storage, that is workable for those particular technologies.

Mr. Pallone. Well, thank you all.

Thank you, Mr. Chairman.

Mr. Olson. The gentleman yields back. The chair recognizes the gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. Shimkus. Thank you, Mr. Chairman. It is great to have you here. This shows you how nerdy I am getting. I am really enjoying this panel.

Ms. Stuntz. Thank you.

Mr. Shimkus. And this is a great topic, because there are issues and evolution and processes. Just a brief comment to Mr. Naeve, though. I understand his statement on vagueness and flexibility, but really on the Republican side here, we have been burnt too much by vagueness of law, and there is really a desire by many of us to be more specific, because in other agencies, we feel that they have kind of overstepped that, and then it gets into litigation and you have all these problems.

I want to kind of talk about two kind of regional problems,

and so maybe -- and so let's start with the RTOs and, quote unquote, "price takers." So you know in an RTO, generators can bid, we have a whole bunch that would bid zero to make sure that they can keep their plants running, but the question is, if you have -- if the market has too many price takers bidding at zero, does that mean it is no longer a competitive market? Does anyone want to try that out?

Ms. Tomasky. Well, I don't know whether it is no longer a competitive market, but it is not a function --

Mr. Shimkus. Pull that a little closer.

Ms. Tomasky. I am sorry. It is certainly not a functioning market that is going to bring suppliers in, because there is only so long you can bid at zero. The --

Mr. Shimkus. See, let me go where I am. Illinois used to be a net exporter of power.

Ms. Tomasky. Yeah.

Mr. Shimkus. And now with this change, Illinois may be transforming through decommissioning for a lot of reasons, one of it might be this market that is not functioning normally because of the price takers. So that may be added onto some generators who now aren't getting a market signal for price, already feeling the pressure from other regulatory pressures, and will in essence walk away from the market.

Ms. Tomasky. Well, I think the fundamental problem, as I understand it, it really kind of goes to nuclear plants. Is that really what you are talking about, sir?

Mr. Shimkus. No, because I don't think they are the -- they are not the price takers. They are not bidding -- they can't, because their operating costs are too high.

Let me -- so I guess the question is, who is a price taker? Who is a price taker, in your -- in these markets?

Mr. Naeve. Let me begin with your first question, if you have significant numbers of price takers that are bidding zero, for example, can you have a functioning market? And I think the answer depends on why people are bidding zero. So, for example, if you are a nuclear plant, nuclear plants can't be turned off and turned right back on 5 hours later. They have to run continuously. So they can't bid a price such that at some point -- if they bid a higher price and then the market sets a lower price, they will be told to shut down. They can't afford that. So they bid a very low price so that regardless of the market price, they are still taken by the RTO, because they can't turn back on again the next day.

So they hope to make enough money during the daytime to make up for their losses in the evening, and that is their hope at least. So --

Mr. Shimkus. But it is a risk, it is a gamble too on their part?

Mr. Naeve. It is a gamble, right, of course. And if they are not making enough sufficient revenue, then they may have to shut the plant down, but they are behaving like a rational market participant. And I think if -- if participants are bidding with those characteristics, they are bidding that way, it still means you have a functioning market. Now, if you have people bidding --

Mr. Shimkus. Let me stop. I only have 1 minute left, and I want to get this out. So I do appreciate that, because we are seeing that right now and it is forcing decommissioning early of -- well, I don't know about early, but plants along with the other stress.

Let me address another kind of a distortion of the market that we see right now. So you have, you know, States who enact PURPA laws, so then you have granted transmission siting which will go from -- and my colleague, Mr. Pompeo, is not here -- from Kansas, through the State of Illinois, through a couple States just to reach PJM, because some of these states are making state regulatory decisions on the State portfolio, but there is really no benefit. That is not feeding into MISO. They are designed to feed into PJM and access these State requirements. That is kind of a distortion of the market too, wouldn't you say? Anybody can

jump in. I mean, I don't --

Mr. Naeve. Well, can I finish just one comment on the prior question, and then I will be happy to respond to that?

Mr. Shimkus. Yeah.

Mr. Naeve. That is, if you are bidding as a price taker at very low prices because a particular government subsidy that you have, then that subsidy makes it profitable to bid at a low price, like a price below zero.

Mr. Shimkus. What kind of subsidy are you referring to?

Mr. Naeve. Well, like production tax credit, for example.

Mr. Shimkus. Okay. We all know what that is, right?

Mr. Naeve. And that does affect the functioning of the marketplace, so I kind of depends on why they are bidding.

With respect to your second question, I am not sure I quite understood the context. People are --

Mr. Shimkus. Well, I am just saying you have got multi-state transmission grids built solely to affect the PURPA market in PJM, crossing State lines that have no -- really in essence are designed to feed the PJM market and not to feed the MISO market.

Ms. Tomasky. Sir, I think that that is a legitimate policy issue. I am not sure that I would agree that it is a function of the design of the marketplace. I think it is a result of the fact that the transmission entities have an opportunity, the suppliers

have an opportunity to build, but these lines are not built yet. They are seeking to build them.

Mr. Shimkus. No. They have being built. There are two crossing the State of Illinois right now.

Ms. Tomasky. Yes, sir. They are being built. They are not in service at this point, so I don't think we know how the market works. But I completely agree with you that one of the issues that we have as a result of the divisions among the regions is that we don't have a consistent policy for reconciling the interests of one region to another. I think that is a very legitimate issue.

Mr. Shimkus. Thank you. Thank you.

Mr. Olson. Well, thank you. The gentleman yields back. The chair recognizes the gentleman from New York, Mr. Tonko, for 5 minutes.

Mr. Tonko. Thank you very much, Mr. Chair. And let me thank our witnesses for being here today. I very much appreciate hearing more about the historical changes to our electricity markets from the Federal perspective, because I have a slightly different perspective from my time as chair of the New York State Assembly Energy Committee beginning in the 1990s. I saw the rush to restructure utilities in my home State and some of the unintended or even unconsidered consequences, where consumers to

this date are paying for stranded assets a long time after the fact.

That being said, it is clear that utilities' business models were changing then. It is even clearer now that they will continue to need to evolve drastically. We should do our best to understand these changes, and that is why this hearing, I think, is very helpful. We need to keep up to ensure reliable and affordable electricity is the result.

So, Ms. Tomasky, let me ask, in the years since FERC's order 888, have there been times when competitive markets have worked better and worse than anticipated? And, in your opinion, what have been the most influential factors in having a working market?

Ms. Tomasky. Thank you, sir. I would say that, as I mentioned earlier, certainly the poster child for failures of marketplaces were the events that happened in California. There have been other -- and I think that this committee has looked at them extensively, and they have a lot to do with bad actors in the marketplace, inadequate supply planning. I personally believe that supply needs to move effectively across State lines whenever it can and that that actually creates efficiency. We had some of those issues in California as well.

There have also been certainly perturbations in the marketplace, but generally I would say that we have a lot of good

things that happen. They happen -- when I say "good," though, I mean from the perspective of achieving that goal of a competitive marketplace, which is to have your price set by the marketplace. For example, we have seen a recent decline in capacity prices into competitive markets that have been occasioned by the vast supply of natural gas available. So that is good from the perspective that it brings down the cost, but as I think others have alluded to, it does create public policy issues, because it creates questions around the viability of nuclear plants, it creates issues about local investment values for other existing facilities, and it really doesn't have that ability to look at other values.

So I guess I would say that there is a lot of success in the operation of competitive marketplaces, but there is a whole host of policy issues that people want to talk about and should talk about that aren't necessarily able to be addressed by competitive markets.

Mr. Tonko. Thank you. And for our panelists that were at FERC in the 1980s and 1990s, there was this decision obviously that FERC made to open access, allowing the creation of competitive markets. Do you, individuals, believe that the decision to open access envisioned preserving the traditional jurisdictional boundaries between states and Federal authorities?

Mr. Naeve. Well, first I would say the experiment proved, I think, in many ways, certainly with gas markets, incredibly beneficial and stabilized the gas markets and lowered prices. I think, as the other witnesses have testified, competitive markets have functioned in most circumstances, certainly recently, very well.

With respect to how that has affected -- open access has affected State boundaries -- the jurisdictional boundaries, in some ways the boundaries are the same, but what happens is more and more of the, for example, power supply becomes wholesale supply, and wholesale supply is subject to FERC jurisdiction as opposed to local supply. So FERC's jurisdictional reach has increased.

When you have regional transmission organizations, previously most transmission service was part of the integrated system when serving local service, it was regulated by the State, maybe 5 or 10 percent or 15 percent for some utilities was regulated by FERC as they served interstate markets. Today if you are in a regional transmission organization, 100 percent of that transmission is now regulated by FERC. So because of the change in the operation of the industry as a result of competition, more subject matter is subject to FERC jurisdiction than previously, although the boundaries are the same; it is just simply the system operates

differently than it previously did.

Mr. Tonko. Mr. Smith, did you want to add to that at all or --

Mr. Smith. Well, I would just say I recall specifically conversations with policymakers from California in which they seemed surprised that the market restructuring that they had undertaken was going to cause State regulators to lose a lot of jurisdiction over things that they had previously regulated. So I am not sure the regulatory shift that was caused by the creation of the RTO markets was fully understood by some of the proponents of the RTO markets.

Ms. Tomasky. Would you like me to add? Having been there, I can say that we certainly sought to respect at the time that division, but it was our expectation that over time there would be a pretty significant shift and that markets should -- and regulators should be adjusting to that.

Mr. Tonko. Okay. Thank you. Mr. Chair, I yield back.

Mr. Olson. The gentleman yields back. The chair recognizes the gentleman from Ohio, Mr. Latta, for 5 minutes.

Mr. Latta. Well, thanks, Mr. Chairman. And thanks very much for our panel for being here. Again, it has been very, very informational this morning. I really appreciate it.

If I could go back to the gentleman from Illinois's

questions, especially when we are talking about the price takers.

Ms. Tomasky, if I could ask you, when they were designing the markets, how do you think FERC anticipated the participation of the price takers? Do you think that there was a lot of anticipation of exactly what was going to happen there, the price takers?

Ms. Tomasky. Well, sir, I would say that there were -- we actually did anticipate that there would be -- I don't think we spent a lot of time talking about that particular issue, but I will say that there was an expectation that there would be plenty of circumstances -- particularly as the RTOs and the more complicated market structures developed, we certainly did expect that people would be -- that the market would set a price and people would have to make a decision whether to bid into that market on the basis of what was there or they wouldn't be able to support their generation. There were, of course, things we didn't expect.

And as I mentioned, the price of natural gas and the effect that it is having on existing generation is not something -- while we expected it to happen at times and in cycles, the sort of pervasive sustainable preference that the market currently has for natural gas and the effect it is having on people who are putting in -- having to make those decisions into the marketplace, I think

it is fair to say we did not anticipate that.

Mr. Latta. Thank you very much.

Ms. Stuntz, if I could ask you a couple questions here. You mentioned in your testimony that during the advent of the regional transmission organizations, the RTOs, and also the independent system operators, ISOs, were designed to be independent entities to manage transmission with the ultimate goal of opening access to transmission. Would you share your thoughts to the subcommittee on whether the RTOs and the ISOs have been successful opening that access to transmission?

Ms. Stuntz. I think they have been. I think fundamentally FERC started that and imposed an obligation on all entities, really all transmission owners whether or not they are in RTOs, but I think the advent of those entities -- I mean, it is a sort of a strange situation where the owners of transmissions still own them, but they basically have turned over functional control of those assets to this nonprofit entity who runs markets as well as sort of really manages the transmission system to ensure that it is operated on a nondiscriminatory basis.

It also does planning. It helps determine on a regional basis where they exist on a regional basis or in an in-State basis, whether it is just a single State, with ERCOT or California or New York, here is what we need, here is when we need it. It

has gotten more complicated lately because we now have fights about who gets to build it, which we don't need to go into today, but it is -- I think they have been successful in that area.

Mr. Latta. Let me ask you a follow-up. Do you think there are any improvements out there that you would suggest to the RTOs and the ISOs, what kind of improvements that could be made?

Ms. Stuntz. Well, I think there -- you know, I think what -- particularly coming into a State like Ohio, I mean, I think the seams, planning across the seams and where they exist -- you know, electrons don't respect the boundaries of PJM and MISO, and when you have two RTOs adjacent that have different policies on capacity markets or different kinds of planning paradigms, it is creating -- even how to measure whether they are -- and FERC has tried to set rules about how you measure whether transmission is available. FERC has tried to work on those seams, but to me, that is -- it is not so much -- I mean, they are different, they are not the same, they do things differently, but the seam issue, I think, is a big problem and stands in the way of, I think, markets that operate better for consumers and planning that works better for consumers.

Mr. Latta. Okay. But when you say that FERC is out there trying, trying is not the same thing as succeeding.

Ms. Stuntz. Right.

Mr. Latta. Wouldn't you agree?

Ms. Stuntz. I agree. I don't -- I would say that on the area of sort of interregional planning and you across the seams, I don't think FERC has had a lot of success yet, and they need to pursue it more aggressively.

Mr. Latta. Okay. When you say, "pursue it more aggressively," how do they pursue it more aggressively, then, so they can be successful in that, then?

Ms. Stuntz. Well, I don't -- I mean, they have created order 1000, which is more recent history than we are talking about today, but they have specified that there should be interregional planning, but I think -- and they have sort of -- but it is more -- to me it is more an exhortation. It hasn't been backed up with firm requirements and compliance requirements. And I think that -- and I think they are still struggling with the balance we have talked about today in terms of trying to be sensitive to regional differences and the way regions and States want to do things, but when you have two, as I said, next to each other in places like Ohio that have differences, how do you -- when do they come in and say, all right, this is how you have to do it? And being that prescriptive, I think, has been hard for them. At some point I think they may have to be that prescriptive on these seams issues.

Mr. Latta. Thank you very much, Mr. Chairman. My time has expired and I yield back.

Mr. Olson. The gentleman yields back. The chair recognizes the gentleman from New York, Mr. -- oh. Oh, from Texas. I am sorry. Mr. Green from Texas.

Mr. Engel. Almost got in there when --

Mr. Olson. He slipped in there on you.

Mr. Green. It is very seldom a Texan moves faster than a New Yorker.

I want to congratulate our new chair and neighbor and friend. Congratulations, Pete. And I look forward to working with you. The good news is we both speak Texan and we both work together on energy, so -- but, again, looking forward to working with you.

I want to thank the chair and ranking member for holding the hearing. The Federal Power Act has provided a foundation for stable, low cost electricity, and I hope to learn how the policy developed and how the market has changed.

Mr. Naeve, Mike, in your testimony, you discussed how over time FERC has moved from being an agency primarily focusing on regulating rates to an agency that protects competition and balances supply and demand, and I think this is an extremely important role. You also provided an important context on the difference between natural gas markets and electric power markets.

Can you elaborate on the challenges the electric power markets face in balancing supply and demand while enhancing competition?

Mr. Naeve. Well, the ideal would be if we have robust competition. Competition itself would balance supply and demand, just as it happens in the natural gas markets. However, in the power markets, there are, as I mentioned, important differences; one difference being, for example, that you have to instantaneously balance supply at any given moment with demand at any given moment. That is not so much the problem in the natural gas industry where you have line pack, you have fuel storage, and so forth. So it is far more complicated in the power industry. And so consequently, you have to have much more robust regulation to provide reliability.

In terms of having adequate supply, we have designed capacity markets to try to ensure sufficient surplus supply, that we meet the reserve requirements, but that is complicated. It is really a tweak on the competitive market to add these capacity markets to see if we can ensure sufficient surplus capacity, but it is complicated. If you left it purely to the market and asked the markets to respond to prices, it is not clear that we would have enough surplus capacity at any given moment to meet our needs. We may have more, we may have less, but it wouldn't be the right amount, so we have had to tinker with the markets to try to

address that problem.

Mr. Green. What constraints has the Federal Power Act placed on these factors, in your opinion, or what improvements, if any, are needed statutorily that would improve that balance?

Mr. Naeve. In my mind, the jury is still out on whether additional changes are needed to the Federal Power Act. I don't see any immediate constraints at this stage. The commission has been given additional jurisdiction by this committee and the Congress over reliability, and they can use those powers. As I mentioned earlier, the statute gives them tremendous amount of flexibility. So at this stage, in my mind, the jury is still out as to whether additional changes are necessary.

Mr. Green. Okay. Of course, in Texas we have a deregulated market for our retail and we have ERCOT, and we still have some challenges during the heat -- we didn't have them this year during the hot summer, but we have had over the years, and the interconnect issues. Would States and regions like the Southeast choose to continue to stay regulated, and what are the advantages or disadvantages of that model? And, again, even though we have the three different or four different grids, how we can somehow still keep their independence and yet still have the reliability helping one region over the other?

Mr. Naeve. Well, it is interesting with respect to ERCOT,

because ERCOT has limited interconnections with the rest of the -- with the other grids.

Mr. Green. And let me just say, years ago we said we are willing to sell it to you, we just don't want you to take it from us.

Mr. Naeve. No. And actually, I was working in the Congress, in the Senate when we had some issues relative to ERCOT, and central and southwest company, and attempted to connect their nonERCOT utilities with the ERCOT utilities, and it created a jurisdictional crisis. And in PURPA, a statute we have mentioned, they created a fixer in that which allowed FERC to order ERCOT utilities to interconnect with utilities outside of Texas, and by doing it under FERC order, they wouldn't become FERC jurisdictional. So you do have a few high voltage DC interconnections between ERCOT and the rest of the country.

Would there be greater stronger reliability if there were more interconnections? I think there would be, yes. Texas faces this issue, perhaps some other areas as well, like Florida, for example, probably could stand to have stronger interconnections as well.

Mr. Green. Anybody else on the advantage or disadvantages of the model?

Ms. Tomasky. Yes, sir. I do -- the advantages of increased

interconnection, I think, are going to be demonstrated over time. I really do. I think that, as we have mentioned before, the physical limitations aren't the same as geography. There is a lot of important stuff that gets done at States, including attention to reliability. I can't emphasize the importance of the State regulator being local and being able to address local needs, but with that said, we really do have the ability now to move power in a very broad geographic region to coordinate it, and there is so much resource that is in one area that can be moved to another.

I think the key is continued build-out of transmission and continued build-out of interconnection. It has to be done sensitively, but I really do think there is a lot of advantage in continuing to pursue that.

Mr. Green. Mr. Chairman, I know I am out of time. Thank you.

Mr. Olson. The gentleman yields back. And on behalf of my friend from Texas, don't mess with Texas.

The chair now recognizes the gentleman from Mississippi, Mr. Harper, for 5 minutes.

Mr. Harper. And we are excited to know that the Dallas Cowboys now have the Mississippi State quarterback, Dak Prescott starting, Mr. Chairman, so we are happy with that.

But thanks to each of you being here. And I would like to

also say how much we appreciate everything that now former chairman Ed Whitfield did on this committee. He will be missed, and we wish him the very best.

These two questions that I have, the comments and then a couple of questions, are really for the entire panel, so when I get done, I will start with you, Mr. Smith, and we will go down the line on this.

We have two basic types of wholesale power markets in the country today, largely but not entirely coinciding with the type of retail regulation present in individual States. In States where there is traditional retail rate regulation, it seems we have bilateral wholesale markets where generators sell to utilities through company-to-company contracts for power. In areas where States have decided to move to retail market competition, it seems we have bid-based wholesale markets where multiple generators bid into a centrally operated market to serve the load.

So my questions are, in which market are we seeing lower levels of concern about maintaining reliability; and then, second, in which market are we seeing capital intensive -- or which areas are we seeing capital intensive new facilities like nuclear power plants being built?

Mr. Smith. Thank you for those questions. I guess the first

observation I would make is I think there is not a perfect correlation between competitive wholesale -- or organized wholesale markets and retail competition. There are areas of the country in which there are RTOs or ISOs operating but don't have retail competition. There are also areas of the country that have traditionally resisted RTO formation that are now inching, inching towards competitive markets.

There is something called the energy imbalance market that is being developed sort of around California starting with Pacificore and some other utilities in that area joining it. So anyway, those aren't perfectly correlated.

But to get to the thrust of your question, I think the question of how to assure adequate capacity is one that was traditionally handled by states. When States were regulating vertically-integrated utilities, they could establish reserve margins, they could essentially oversee the resource planning, including the generation planning, the vertically-integrated utilities. And in States where the utilities were restructured and in particular divested most or all of their generation, the States no longer have that sort of direct control over what generation is owned by the -- what generation is being used to serve the retail customers in that State.

So in many places we have many RTOs, we have now developed

organized capacity markets of one sort or another. As you may well know, those have -- there is controversy around capacity markets: A, are they too expensive, are there ways they could work better; B, are they accomplishing what they are supposed to accomplish, and maybe part of the problem there is they are supposed to accomplish several different things which don't always necessarily entirely line up, but certainly one of them is assuring sufficient resource availability on a long-term basis.

I think it is -- there is a quite observable pattern that investment in new nuclear carbon caption sequestration projects, for instance, are happening in States that are not restructured, where essentially State regulatory oversight of a vertically-integrated utility is providing regulatory comfort that the utilities will recover their costs for those new assets.

Mr. Harper. Okay. Thank you. And my time will be up before we can go all the way down the line, but if you have a quick response, that would be great.

Mr. Naeve. I do think it is not entirely clear that in the bid-based markets, that reliability have proven to be a problem at this stage, but it is the case that in, you know, the markets that have not been restructured, regulators have the ability to choose particular technologies that might not otherwise be attractive in a competitive market and saying we are going to support that

particular technology, and can cause investment in that technology and recovery in that investment from customers, so it does give regulators more power to direct resources to particular technologies.

Mr. Harper. It appears that my time has expired, but thank you all for being here.

Mr. Olson. The gentleman --

Mr. Harper. I yield back.

Mr. Olson. The gentleman's time has expired. The chair recognizes the gentleman from Vermont, Mr. Welch, for 5 minutes.

Mr. Welch. Thank you very much, Mr. Olson. Thank you to the panel. Very good testimony.

Mr. -- or I guess, Mike, I wanted to ask you a little bit about your experience doing a very difficult thing when you were at FERC with respect to the changes you had to make and how that might apply to trying to have much more sensitivity and flexibility with demand response energy efficiency and distributed generation. I mean, one of the challenges we have with energy policy is trying to make certain that those options are treated fairly in the process, and it is difficult, because it is a big change. Generally the focus on reliability and costs, obviously very legitimate, have been driven by the centralized generators. They have a seat at the table.

The only ISO where some of these other folks with alternative energy have a seat at the table is ISO New England, but in Vermont where we have had some utilities that have been all in on being leaders rather than resisters to this, there is documented savings on transmission costs of about $400 million. Now, we are a small State. That is real money.

So if we want to have some flexibility here so that those regions of the country want to implement as much as possible demand response distributed generation, what are the one, two, three steps that we would need to take in order to facilitate that effort?

Mr. Naeve. Whenever the commission goes about trying to restructure a market, they have to be careful about a lot of things. If they are restructuring a market, there are going to be winners and losers. There are some people that will have invested in reliance on regulations, for example, and then that regulation is taken away and their investments may not be attractive at all. They also need to be sensitive to evolving technologies and to regional differences. And I think FERC has been sensitive to those concerns over the years.

So, for example, with respect to distributed generation, some would say FERC has jurisdiction over distributed generation. Sales back to the utility by distributed generation to many look

like wholesale sales. FERC has chosen not to regulate many of those sales, and step back. You have a laboratory in a lot of the States with respect to distributed generation, with respect to demand response --

Mr. Welch. Yeah, but what I am looking for is what, if any, changes do we need to make at FERC or either expansion of their authority or legislative direction in order to facilitate States that are choosing to invest in this distributed generation approach?

Mr. Naeve. I think States today are making those decisions, and FERC is not standing in the way, so I, frankly, don't think that there are changes that are necessary right now. You see a tremendous growth in distributed generation throughout the United States, certainly in States that have abundant renewable resources available to them, but the commission has the -- has exercised its flexibility to allow that growth to occur. So at this stage, I am not sure if there is a --

Mr. Welch. I don't have much time, so let me go to Ms. Tomasky. Thank you very much.

Ms. Tomasky. Same question?

Mr. Welch. Yes, same question.

Ms. Tomasky. Well, I would agree that FERC has done some things to accommodate that. I would really direct your attention

to the RTOs. I do think you are right. I think ISO New England has created a framework that is useful for integrating that. I don't think it is easy. It is certainly easy to establish the principle. It is -- but the system still has to be managed. And it is really a question of how do you effectively balance the cost value versus the compensation back on distributed generation. I think that actually over time, these costs are coming in and there really will be the opportunity to do it, but I think it is a nitty-gritty issue, it is not a big policy issue. And because I think as a policy issue, it is accepted, so it is really something that the RTOs have to be told that it is a high value and it needs to be integrated. I think that is the solution.

Mr. Welch. But there is a tension, I mean, it goes to the point you made about companies that rely on a certain regulatory framework. I mean, the old energy model was centralized distribution, and the more you produced and the more you could sell, the better it was. We have got some utilities now. And in Vermont, there was an effort to change the compensation model to actually include the ability of utilities to reduce demand and get paid for it, and it has been a tremendous savings for our businesses and to our consumers.

Ms. Tomasky. Yeah.

Mr. Welch. And, you know, on this committee, it is very

tough, because we all come from different regions, and some are oil areas and some are renewable areas, and we have all got to try to represent our constituents here, but it has got to be a policy where FERC has a huge role.

I guess my time is up, but thank you all very much.

Ms. Tomasky. Thank you.

Mr. Olson. The gentleman yields back. The chair recognizes the gentleman from Illinois, Mr. Kinzinger, for 5 minutes.

Mr. Kinzinger. Thank you, Mr. Chairman. Thank you all for being out here; appreciate it. Ms. Stuntz, thank you for giving us your time as well. I appreciate it. My question is for you.

In your testimony, you highlight the vital importance of balancing supply and demand in realtime to create electricity service, something that I believe is becoming even more important as new intermittent technologies are being increasingly deployed around the country.

In designing electric markets, did FERC consider how intermittent resources would impact overall reliability?

Ms. Stuntz. I probably should defer to Susan since -- Ms. Tomasky since she was at FERC and I wasn't. I think given the tremendous growth in intermittent resources and given the policy framework around them in terms of we talked a little about it about the investment tax credit and so forth, you know, I

guess I am not sure that they could have anticipated the way that is -- the way that is all developing, but -- and it certainly is producing, I think, some challenges in some markets, but maybe I would defer to Susan to --

Mr. Kinzinger. Yeah. And if you can add on, just, you know, what considerations were made, like, production tax credit, things like this into the overall.

Ms. Tomasky. Well, with respect to the issues like production tax credits, Congressman, we really took whatever was there as a given. We didn't initiate them, of course. We accepted them in the marketplace. And they were coming and going at that point in time. We certainly had the lessons from PURPA, very, you know, different than the situation we have today, but what we really were concerned about was making sure that as an operational matter, whoever was running the utility system, notwithstanding our competition requirements, had the ability to operate it effectively, so they had the ability to make judgments about the integration of resources.

So I think it is fair to say that while we didn't envision -- we certainly didn't envision the issues of intermittency, we didn't envision the challenges of moving power across long distances to accommodate that, and the underlying adequacy issues that needed to be addressed, we did understand

that when you bring a lot of different sellers together with different performance characteristics and then you are going to distribute them against long distances, there were real challenges to getting that done effectively. That is one of the reasons that we looked to the RTOs as coordinating organizations, because we thought they had the ability to bring together the technical knowledge in order to do that.

Mr. Kinzinger. So just to kind of follow up, did anybody perceive that there could -- I mean, obviously we didn't envision what has happened, but did anybody perceive that wind, in fact, wind energy would become so dominant that you would see a lot of these current existing power plants have to actually throttle back or shut down because of the them?

Ms. Tomasky. Well, certainly at the time of Order 888 we didn't contemplate that scenario. As you got further down into the years and we began to see wind development, I saw that as a utility developer of transmission in Texas, we saw some similar kinds of issues there.

Mr. Kinzinger. So in the existing regulatory framework, what options does FERC have to value existing generation that contributes to overall reliability, generation diversity and the ability to run in severe weather?

Ms. Tomasky. Yeah. I would have to say that FERC has very

little ability to value generation. I think that --

Mr. Kinzinger. Is that because of what we have done or, like, kind of the rules you are operating under?

Ms. Tomasky. I think it has to do with the basic structure of the regulatory framework. Now, in the RTOs, there has been some allusion to capacity markets that overseen by FERC. There has been some ability to try to think about longer term supply, but really I think you are hitting on the fundamental policy issue that has to be addressed, which is are there -- do we -- are we going to see values outside the marginal costs of a power supply that we want to choose to integrate and that we want to require RTOs. And the problem, of course, is that there are a long list of those and they are conflicting --

Mr. Kinzinger. Yeah.

Ms. Tomasky. -- but I do think that that is very much something the committee should be looking at.

Mr. Kinzinger. Okay. And any -- yeah. Go ahead.

Ms. Stuntz. Could I just add to that? I do think FERC -- maybe a slightly different take on it. There are -- going back to a thing called ancillary services, which have been developed and are called transmission services because they support the grid and they are regulated by FERC, but essentially they are things like spinning reserve, nonspinning reserve, A

black start capability, there are being developed markets for those things, they are valued. They can -- people that provide voltage support, reactive power are able to collect a value for that. And although a lot of this has been developed from sort of the ground up either by state regulators or by RTOs, FERC has been pretty good, I think, about saying, yeah, okay. And I think the Cal ISO is now in the lead of trying to say, well, if we are going to handle that duck curve thing, we need a generator out there or a demand response offerer who can either ramp up really quick or ramp down really quick, because when the sun starts going down at 4 o'clock in the afternoon, we have got to have somebody that can step up, and if you can do that, we will pay you for that. I mean, that is the only way these markets can work, right, is you define a product that meets the need you have, and then let -- and then hopefully find a value for it, but it is the big challenge, because sometimes standing by with a gas plant that is only going to operate 20 minutes of a day, you know, 3 months of a year and then getting a return on that investment, that is a big challenge.

Mr. Kinzinger. Okay. I yield back. Thank you.

Mr. Olson. The gentleman yields back. The chair recognizes the gentleman from New York, Mr. Engel, for 5 minutes.

Mr. Engel. Thank you, Mr. Chairman. I had almost gone to the wire about 20 minutes ago, so it shows you when you don't get

under the wire, things get delayed, but thank you very, very much. And I want to thank all of four of you. This has really been very interesting, very enlightening, bipartisan. That is what makes this committee great. So thank you.

As we consider applying the lessons of the past to energy markets of the future, I think it is important to keep three fundamental goals in mind. First is resilience. We in New York suffered through superstorm Sandy and other tropical storms, such as Lee and Irene, left millions of New Yorkers without electricity. In the face of increasingly common extreme weather events, we obviously need to keep the power running at all times so Americans can keep their food and medicine cool and their homes warm.

Second is financial cost, because we can't ignore that. As with virtually all goods, the price of electricity as risen through the years. Though the increasing electricity prices have been relatively compared to other goods, we need to be mindful of generation, transmission, and distribution costs all with an eye on keeping prices low for rate payers.

And thirdly, environmental costs. Power generation is the primary source of greenhouse gas emissions in the U.S. and across the globe. We have to diversify our sources of energy and accelerate deployment of clean, low carbon technologies to protect

the health and well-being of all Americans. So with these objectives in mind, we need to -- we must adapt to the changing ways that we are generating and using electricity.

Today's consumers are taking advantage of various smaller scale distributed energy resources like solar panels and electric vehicles to generate and store power in line. They are monitoring and managing their energy consumption through smart meters and other devices.

So in light of these game-changing technologies, let me ask anyone who cares to answer, was there a time in the past when we experienced widespread changes in power generation similar to the changes we are experiencing now, and if so, how did we handle that and what lessons should we take from that experience? I stumped everybody.

Ms. Tomasky. Well, I will go. I think it is fair to say although the pace has accelerated, that we have, throughout the history that we are talking about, seen new technologies change where we are and what we -- how we needed to adjust. To be fair, most of those technological innovations have happened in larger scale generation, but as Linda said and I discussed at length in my testimony, the natural gas turbine really did precipitate a lot of this. Similarly, we have seen improvements in solar and we have seen improvements in wind, and as the cost structure

associated with that has come down, we have had -- we have seen proliferation and changes in the marketplace that we have had to adjust to.

The specific things that you are talking about, which I think are very interesting, take us to sort of the different arena. They take us to the retail side of the equation, because they really are things that have the ability for the customers to change the shape of the way the utility does business. We have seen over the last few years, and I think this is one of the things that surprised us, is seen relatively flat demand, even as the economy has come back from the recession, and some of that has to do with efficiency, some of that has to do with choices. There is still huge still, in my view, low hanging fruit out there to be harvested in terms of energy efficiency, and there is this whole arena of things that you are talking about.

I think it is fair to say -- what we have learned from them is that you need to be flexible, that you need to have enough authority in the hands of people making the decisions that they can move the pieces around to make that happen. I think, to me, that is the single most important lesson.

Mr. Engel. Well, thank you. I want to get in one other question before my time is up, and I want to piggyback on some of the things that Mr. Welch asked, and tied to my home state.

New York is leading a program called Reforming the Energy Vision to Overhaul the Longstanding Electricity Business Model, and its aim is to modernize, to centralize and decarbonize the grid largely through substantial additions of distributed energy. In early July, New York's six investor-owned utilities submitted their 5-year plans to add distributed energy sources to the grid.

How do you see the intersection between FERC's oversight of markets and New York's program, and do you foresee any potential problems? Let me ask Ms. Stuntz and Mr. Smith, because they didn't comment on Mr. Welch. And I am wondering if you could comment on that.

Ms. Stuntz. As I understand it, and I have reviewed it briefly, because California is very interested and I serve on a board there, I don't see any conflict at this point, because it appears to me that New York is focused on sort of the distribution system.

Now, as I said at the outset, sometimes that line between distribution and transmission is as wavery as the line between wholesale and retail, but I think looking at retail and distribution and what the future of sort of the whole distribution system means and who administers it and how do you make it more effective to support distributed generation is something that California is very much in the middle of as well, and I

don't -- you know, I think so long -- again, there may come a time when you run up against that Hughes Supreme Court decision that you are directly affecting the wholesale rate, but as I pointed out in my testimony, the court -- the majority -- the court there went out of its way to say, you know, we are mindful that states are doing things like trying to decarbonize their energy, like trying to increase security, and we will not -- we don't intend this to be read broadly to interrupt those efforts so long as they don't directly affect a wholesale rate.

I would just add, you know, the three criteria you point out, you know, resilience, cost, and environmental improvement, the real challenge to me on a lot of these things is those are not necessarily going to be consistent. Some of the things that will make your grid most resilient, you know, there are really hard questions about how you incorporate a lot of new distributed generation while maintaining security, while maintaining safety, you know, both at its very low level, you have got to know whether the line is energized or not, somebody has got to be able to work on it, and at a much higher level, cyber and so forth. So keeping those things in balance, but keeping them, I think, at the forefront appropriately is going to be the challenge, but I don't see FERC as being a problem for what New York is trying to do.

Mr. Engel. Thank you. Thank you both for your answers.

Mr. Olson. The gentleman yields back. The chair recognizes the gentleman from Virginia.

Mr. Griffith. Thank you very much, Mr. Chairman.

Mr. Barton his on it earlier when he said the EPA's clean air versus what FERC is trying to do and are they in conflict, and, Ms. Stuntz, you indicated there were going to be some stress there, if I remember your answer correctly. Those weren't your words, but that was pretty much what you were saying, there was going to be some difficulty there. And we have got all kinds of things going on in my district. I represent southwest Virginia, the mountains, the coal district. We have lost two of our power facilities there, as you would know, Glen Lyn and one of our Clinch River, the other two were converted from coal to natural gas, given us about half that power, and so that is a concern to the area, but as a result of some of what is going on with coal around the country, we also have the stress of all these pipelines coming through that FERC has to take a look at. And I am told that in regard to the pipelines, that FERC is just looking to see if there is some kind of market, and this is open for everybody, but there is some kind of a market out there, but not necessarily the full. So I have got -- in coming through the mountains, one of them is in Bob Goodlatte's district and Robert Hurt's district, the other is in mine and Robert Hurt's and touches Bob's a little

bit. We have got two large proposed gas pipelines coming through to make sure that there is reliable electricity in other parts of the country, and I think Mr. Shimkus touched on this too, and yet we are disrupting all kinds of communities, some of them have been there for hundreds of years that are now having a pipeline going right through them. This is a great concern.

So how do we balance all that out? And did we make a mistake in shutting down those plants? And I am not talking about the electric power companies shutting them down, because EPA had rules that forced it. But as a sense of reliability, did we make a mistake in shutting some of these plants down? Could we not have figured out a way to leave them on to make sure we had reliability?

I will open that up to you all, and then I have got some more questions about what do we do about the stranded assets and the fact that should we be paying those folks who have the baseload plants for being there, for their reliability, not just gas, but also coal, because we are losing coal and we are seeing some even nuclear plants get shut down.

Anybody want to touch any of those five or six issues I threw out there? That is what happens when you only get 5 minutes and you have got all kinds of things.

Ms. Stuntz. And I will try to be brief, to allow my

colleagues to speak, but you are touching on one of, I think, the greatest challenges we confront right now, which is infrastructure. You know, we have the benefit as this nation of tremendous clean natural gas resources, and if we want to decarbonize, it is just a fact that natural gas prior to electricity is about half as carbon intensive, depending on your studies, as coal-fired.

So given that premise, so we should want to move to natural gas generation, but you have to transport it, and, you know, we have to find a way for people to understand either as a shared value, this is good and we should accept it given appropriate royalties and so forth, payments, or not, or we are not going to get there in terms of where we want to go decarbonizing the economy, where public policy seems to want to go.

RPTR MELHORN

EDTR HUMKE

[12:04 p.m.]

Ms. Stuntz. And it is not just gas pipelines. It is oil pipelines. You see all the news. It is all that infrastructure. We have got to figure out -- because it doesn't always -- you are right. Exactly. It doesn't always benefit the place where it goes. But it benefits us as a country. So how do we bring that together? And that is an -- I don't have an answer to that.

Mr. Griffith. Well, and as one interesting side note, many of the people who are opposed to the pipelines also favor getting rid of coal. So you have got the dilemma that they didn't want the coal plants. And now they don't want the pipeline. But you also have this dilemma that I have in one of my communities that is really -- I don't know the answer. And I guess I should ask if FERC actually pays attention to this.

I have got a little community that butts up against the National Forest. It even butts up against or pretty close to a wilderness area. And you have got a historic community, and they want to put the pipeline basically through the middle of the town. Does FERC look at those things? Because I got to tell you, I can't figure out where that goes where you don't destroy something

that is a natural wonder or destroy this little community that has been nestled in the mountains for a couple hundred years. Does FERC looks at those things when it is trying to approve this?

Ms. Tomasky. Yes, sir, the FERC does. And it certainly should. I mean, that is exactly the kind of thing in the siting process that should come forward. And I would certainly encourage that community, if they haven't done so --

Mr. Griffith. Oh, they are all over this.

Ms. Tomasky. I bet they are all over it. It is a consideration, at least in my experience. We went to great effort. Even though there was general support for pipeline development, we went to great effort to make sure that the right analysis was done and that important issues like that were protected.

Mr. Griffith. That is my dilemma. I can't figure out at that one spot, I cannot for the life of me figure out how you approve the pipeline without doing damage to something. Because there is just a narrow spot there where you don't have much choice.

Ms. Tomasky. Of course I don't know anything about that.

Mr. Griffith. Yes ma'am.

Ms. Tomasky. But I would think routing around it, I would hope, could happen.

Mr. Naeve. You know, it is almost impossible, of course, to site a pipeline without doing some damage. And the responsibility of FERC is to try to find a routing that does the least damage at not too great an expense. But it is not unusual at all for a pipeline to propose a particular route, and then that hold -- for FERC to hold public hearings and investigations to decide what are the effects of that particular route and to ask for changes in the routing to avoid some of those damages. That is a fairly common result.

Mr. Griffith. Stay tuned. Thank you very much. My time is up. I yield back.

Mr. Olson. The gentleman's time has expired. The chair recognizes the gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. Johnson. Well, thank you, Mr. Chairman. And thank you to the panel for joining us today. I appreciate your time. You know, earlier this year in FERC versus EPSA, the Supreme Court case held in favor of the commission's demand response program. Finding that FERC has jurisdiction because the program directly affects wholesale rates.

And we will go right down the line here to all four of you. Do you think this ruling could be interpreted in a manner that expands FERC's jurisdictional or other types of electricity programs or practices? Mr. Smith.

Mr. Smith. Well, the affecting jurisdiction is one that the court tried hard to draw some bounds around because -- in fact, it announced a principle about direct effects or directly affecting. Because there is so much interconnection between -- bad word. So much interrelationship between things subject to FERC jurisdiction and things subject to State jurisdiction, that if you read affecting literally, it might swallow everything that had been previously State jurisdiction.

So the court tried hard to impose some bounds there. I guess the other thing I would say is the court noted that in that particular policy that the States had the option of opting out so that the State could decide that the demand response providers in its State couldn't participate in the PJM market. And the court seemed to lean on that as a helpful fact to say this isn't a FERC power grab. This is FERC trying to stay in its lane and leaving the related choices that are the State regulatory choices to the State.

Mr. Johnson. Okay. Any of the rest of you have anything to add to that or you agree?

Ms. Tomasky. I think it is a really good summary.

Mr. Johnson. Okay. All right. Well, given the fact that the Supreme Court ruled on two cases focused on the Federal Power Act this year, do you anticipate that the Supreme Court will

continue to be active in the area of electricity markets? Now, you know, this is asking you to pull out your crystal ball. I realize that. Mr. Naeve, why don't you take that one.

Mr. Naeve. I think they will be merely because we are in such a state of flux and there will undoubtedly be future concerns about the scope of FERC's jurisdiction, the scope of State jurisdiction, other issues. So I do think we will see future challenges. And the court has shown its willingness to step in and decide these cases. So I can't say today what that case may be, but I do think, yes, they will continue to be active.

Mr. Johnson. Okay. All right. You know hydropower often can be dispatched into the power grid a lot like a battery. That is, sometimes hydro dams can store up a lot of water and then they can spill it when it is needed to generate electricity. When the markets were being developed, how did FERC value that storage capacity in hydro? Ms. Tomasky, do you have a --

Ms. Tomasky. You know, we certainly were aware of it. But I have to tell you, there was so little new development. You know, there is an awful lot of existing facilities out there. And some of them are within the geographic areas that were likely to go to competition. But a lot of the larger facilities out West, sort of publicly owned, and maybe outside the kind of sort of operation of the system.

So it is something that I would say was probably on the list of things that we thought might develop in an interesting way. But I can't say that it was central to our consideration.

Mr. Johnson. Okay. All right. Did FERC make any effort, Ms. Stuntz, to create a market value or product for the capabilities of hydro plants?

Ms. Stuntz. Not specifically. But they have certainly approved -- I am aware in the Northwest and a litigated proceeding involving BPA. They have approved sort of tariffs that essentially offer firming service for wind because you are absolutely right. Hydro is one of the few things which you can -- by keeping water up or letting it go, it is instantaneous.

You don't have to worry about ramping things up and fuel and all that. And so when the wind goes down, it has enabled wind to be sold on a firmer basis in the northwest where it is prevalent. And FERC approved those kinds of services.

Mr. Johnson. Okay. Well, thank you very much. Mr. Chairman, let it be noted that Ohio left 10 seconds on the grid. I yield back.

Mr. Olson. So noted. And that is all of our members right now. So here is the second round of questions. Just kidding. It was his idea.

I thank our witnesses. I also want to apologize. I noticed

about 10 minutes into the hearing your lights aren't working. They are going straight from green to red. So there is no warning going to yellow. So that is why we let you go way beyond 5 minutes. Because you guys had no chance to curtail your remarks based on those lights. So I apologize for that.

I ask unanimous consent that a letter is entered into the record from FEC Commissioner Bey to Chairman Upton and Chairman Whitfield about the current and future state of organized electricity markets. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

And I remind all members you have you 5 working days to submit questions for the record.

This hearing is adjourned.

[Whereupon, at 12:13 p.m., the subcommittee was adjourned.]