

**Before the Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives**

Hearing on

Federal Power Act: Historical Perspectives

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Mr. Chairman, Ranking Member Rush, and Members of the Subcommittee, thank you for the honor of inviting me to address you this morning on the Federal Power Act and the electric industry subject to it. This testimony reflects my personal views and not necessarily those of any client, colleague or firm with which I am affiliated.¹

It has been 35 years since I began my first public service as associate minority counsel to this subcommittee, then known as the Fossil and Synthetic Fuels Subcommittee. It has been even longer since I first grappled with the Federal Power Act in the private practice of law. In that time, there have been momentous changes in the energy industry, including the electricity industry. With material amendments in 1992 (open access to transmission on a case-by-case basis, as well as amendment of the Public Utility Holding Company Act of 1935 (“PUHCA”) to enable more non-utility generation) and 2005 (mandatory reliability standards, incentives for transmission investment, prohibition on market manipulation and increased penalties), the Federal Power Act of 1935 has weathered these changes, though whether it remains fit for purpose for the electricity industry of the 21st Century is an important question to consider.

In 1981, there were no regional transmission organizations. Indeed, there were only limited electricity markets, largely reflected in bilateral wholesale contracts between neighboring utilities. The electric industry was organized around integrated electric utilities with exclusive service territories. [There are exceptions to every general statement with respect to U.S. electric industry structure and regulation, but this is generally true.] Utilities were granted the exclusive right to serve consumers (“native load”) in a state-defined area in exchange for accepting the obligation to serve all customers in that area at retail rates regulated by the states. Typically, these rates were based on recovery of prudently incurred costs to provide service, plus a

¹ I thank my colleagues, Randy Davis and Ellen Young, for their help with this, but am solely responsible for any errors or omissions.

reasonable return on invested capital. Planning to provide reliable service meant estimating the future demand in one's service territory, and building the generation, transmission and distribution to serve that demand. Application of the Federal Power Act to this electricity industry was fairly straightforward, although not without questions.

A. Origin of the Federal Power Act – To Fill a Regulatory Gap.

The so-called “Dormant Commerce Clause” is an implicit limitation under the Constitution on state regulation of, or discrimination against, interstate commerce.² The first electricity systems were largely based in cities and independent of each other. In the early 20th Century, with the beginning of interstate transmission of natural gas and electricity, the Supreme Court had to determine the limits of state authority to regulate these industries. A series of cases culminated in 1927 with *Public Utilities Commission of Rhode Island v. Attleboro Steam & Electric Co. (Attleboro)*.³ There the Supreme Court relied on the Dormant Commerce Clause to hold that a state may not regulate wholesale sales of interstate electric power, and that only Congress could regulate such sales. After *Attleboro*, States could regulate retail sales and intrastate sales, which at that time made up most of the electricity business, but states could not regulate interstate wholesale sales of electricity, which at that time were not extensive. Since the

² The Commerce Clause, U.S. CONST. art. I, § 8, cl. 3, reserves to the Congress the exclusive authority to regulate commerce “among the several States.” The constitutional principle known as the Dormant Commerce Clause is a restraint on state power to legislate in a manner that discriminates against or unreasonably burdens interstate commerce. This portion of my testimony draws heavily from Robert R. Nordhaus, “*The Hazy ‘Bright Line’*: *Defining Federal and State Regulation of Today’s Electric Grid*,” *Energy Law Journal*, Vol. 36: 203, 2015. Mr. Nordhaus is the true expert on this along with Charles B. Curtis, both of whom I am grateful to count among my FPA teachers.

³ *Public Utils. Comm’n v. Attleboro Steam & Elec. Co.*, 273 U.S. 83, 89-90 (“The order of the Rhode Island Commission . . . is a regulation of the rates charged by the Narragansett Company for the interstate service to the Attleboro Company, which places a direct burden upon interstate commerce. Being the imposition of a direct burden upon interstate commerce, from which the state is restrained by the force of the commerce clause, it must necessarily fall. *** The rate is therefore not subject to regulation by either of the two states in the guise of protection to their respective local interests, but, if such regulation is required it can only be attained by the exercise of the power vested in Congress.”)

states could not regulate wholesale sales, and since Congress had not regulated them either, the wholesale, interstate power market was unregulated -- the so-called “*Attleboro* gap.”

Congress approved the Federal Power Act (FPA) in 1935 to fill this gap. Section 201 of the Federal Power Act establishes a comprehensive regulatory scheme for the electric industry, which is still in force today. The states are given the authority over generation, intrastate transmission, local distribution and retail sales of electricity. The Federal Energy Regulatory Commission (FERC, the successor to the Federal Power Commission) is given jurisdiction only in two areas: (1) wholesale sales in interstate commerce; and (2) transmission in interstate commerce. Under the *Attleboro* case, these were the two areas constitutionally beyond state authority to regulate. By its terms, the FPA extended federal regulation “only to those matters which are not subject to regulation by the States.”⁴

For the next 30 years, the Federal Power Commission gradually played a bigger role in electricity regulation as wholesale sales and transmission of electricity in interstate commerce increased with the growing U.S. economy and population. In 1964, the Supreme Court was confronted with a case involving a wholesale sale of out-of-state power by a public utility to a municipal utility in the same state. The public utility, Southern California Edison, and the state of California argued for state jurisdiction over the rates for the wholesale sale, and the 9th Circuit concluded that state regulation was permissible under the Commerce Clause.⁵ The Supreme Court reversed the 9th Circuit, holding that Section 201(b) of the FPA “grants the [Federal Power Commission] jurisdiction of all sales of electric energy at wholesale in interstate commerce not expressly exempted” by the FPA itself.⁶ The Court concluded that the language of Section

⁴ FPA § 201(a), 16 U.S.C. § 824(a).

⁵ *Federal Power Comm’n v. S. Cal. Edison Co. (City of Colton)*, 376 U.S. 205, 210 (1964).

⁶ *Id.*

201(a) of the FPA stating that federal regulation should “extend only to those matters which are not subject to regulation by the states” was only a “policy declaration ... of great generality” that could not nullify the clear and specific grant of jurisdiction in Section 201(b).⁷ Rather, Congress had drawn “a bright line, easily ascertained, between state and federal jurisdiction,” making federal jurisdiction “plenary and extending it to all wholesale sales in interstate commerce.”⁸

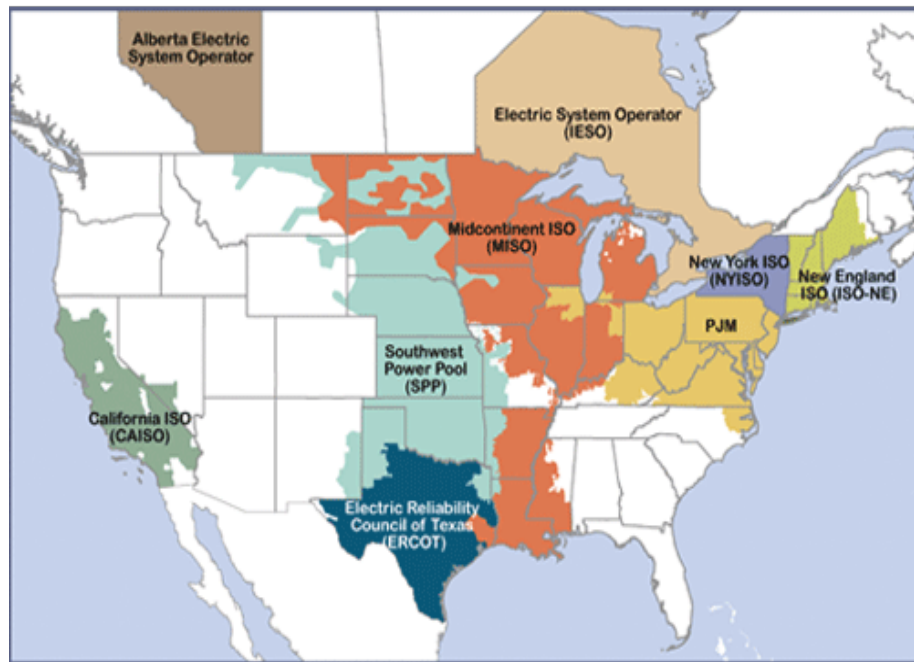
B. The Growing Role of Federal Power Act Jurisdiction as Electricity Markets and Industry Structure Have Evolved.

Fast forward 50 years. In some parts of the country, electric service continues to be provided by integrated utilities with native load service obligations. This is primarily in the Southeast and the West. In much of the country, however, the model has changed in various ways. Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) now provide functional, independent control of transmission assets to assure open, nondiscriminatory access to transmission. They also administer wholesale electricity markets in broad swaths of the country. These markets encompass electric energy and also, in some cases, capacity to produce electricity. Figure 1 shows the coverage of existing RTOs and ISOs across the United States and Canada.

⁷ *Id.* at 215.

⁸ *Id.* at 215-216.

Fig. 1: RTOs/ISOs



Source: FERC

Some generation assets remain subject to cost of service regulation, but much electricity is now sold at market-based rates in RTO/ISO-administered wholesale markets or via bilateral contracts, by utilities and by non-utilities, including marketing and trading entities.

Hundreds/thousands of non-utility generators operate facilities ranging from large fossil generation to wind, solar, and landfill gas at both “utility scale” and smaller (rooftop solar). Amidst this proliferation of generation and with the advent of open access to transmission, RTOs/ISOs also administer markets for important transmission-related “ancillary services,” such as spinning and non-spinning reserves, and increasingly are defining new products needed to keep the lights on, such as “ramping” capabilities (more on that later). Finally, RTOs/ISOs and utilities are also procuring “negawatts” or demand side management as a resource to meet load.

Utilities generally retain at least a Provider of Last Resort (POLR) responsibility for serving retail customers, but in some states, these “Load Serving Entities” have no generation.

Instead, they purchase electricity at wholesale in RTO/ISO-administered markets or via bilateral contracts for delivery to retail consumers.

How did we get to this kind of a patchwork from the simpler world of electricity industry structure and regulation in 1981? In my view there were four primary factors:

1. The Public Utility Regulatory Policies Act of 1978 (PURPA)⁹ established that electric generation need not be treated as a monopoly and could be provided competitively by non-utilities, although this was not PURPA's stated purpose.¹⁰
2. Many areas of the country suffered "rate shocks" as a result of over-budget nuclear plants, which followed the Three Mile Island accident. This rate shock created demand for lower cost generating resources and shook public confidence in the wisdom of leaving monopoly utilities exclusively in charge of procuring electricity supplies.
3. Experience with oil and natural gas deregulation caused a growing belief that markets were the best way to obtain the most reliable and efficient supplies of energy, not regulation. Enabling natural gas customers to obtain natural gas from other suppliers and requiring natural gas pipelines to provide open access for those alternative suppliers reduced consumer natural gas prices and increased competition among suppliers. Surely, the electricity industry could follow the same path.
4. Finally, the adaptation of the jet engine to utility purposes, combined with healthy supplies of natural gas and low prices following deregulation created a tremendous

⁹ 16 U.S.C. § 2601 and following.

¹⁰ While PURPA has become known for the opportunities it mandated for sales of power by so-called "qualifying facilities" owned and operated by non-utilities, the statute was enacted to encourage energy conservation through changes to utility rate structures that previously rewarded higher electricity consumption with lower per unit costs. See PURPA § 111(d)(1)-(6), 16 U.S.C. § 2621(d)(1)-(6).

opportunity for non-utility generators to offer energy that in many areas was lower priced than the incumbent utility offered.

All of these came together in the 1992 Energy Policy Act, which among other things, amended PUHCA to allow non-utility generators other than PURPA Qualifying Facilities to operate without burdensome PUHCA regulation. FERC's landmark Order No. 888, providing for open access to all jurisdictional transmission lines, followed in 1996.

For a time it seemed as if all the country would be organized into RTOs, and that electricity competition would extend from wholesale to retail markets all across the country.¹¹ But the California energy crisis of 2001 and the implosion of Enron slowed this movement. In addition, low utility rates in many areas of the country diminished the demand for restructuring. While some RTOs have expanded and more expansion is being discussed, no new RTO has been approved in some time. Meanwhile, full retail competition remains in effect only in a minority of states.

Over time, the growth in importance of wholesale electricity markets and interstate transmission has caused a similar growth in federal jurisdiction under the FPA. Two Supreme Court decisions earlier this year highlight this. In *FERC v. Electric Power Supply Association*,¹² decided January 25, the Court upheld FERC Order No. 745,¹³ which requires RTOs to pay the same price to demand response providers for conserving energy as to generators for producing it, so long as a "net benefits" test is met (designed to ensure that accepted bids actually save consumers money). The Court of Appeals for the District of Columbia Circuit vacated Order

¹¹ In anticipation of this, FERC initiated what came to be known as the Standard Market Design rulemaking in 2002 (Docket No. RM01-12-000). Finding it overtaken by events, the Commission terminated the rulemaking in 2005.

¹² 136 S.Ct. 760, 577 U.S. ____ (2016).

¹³ *Demand Response Competition in Organized Wholesale Energy Markets*, Order No. 745, 76 Fed. Reg. 16658 (2011).

No. 745, holding that because the order regulates retail electric rates, FERC lacked the authority under the FPA to issue it. The Supreme Court (Justices Scalia and Thomas dissenting) disagreed, saying that “the practices at issue . . . directly affect wholesale rates” and that FERC has not regulated retail sales. Accordingly, Order No. 745 complies with the terms of the FPA. A contrary view, the Court reasoned, “would conflict with [the FPA's] core purposes.”

This broad view of FERC's FPA jurisdiction foreshadowed the outcome in *Hughes v. Talen Energy Marketing*,¹⁴ decided April 19. In this case, the State of Maryland became concerned that the PJM RTO capacity market was not encouraging enough new generation in Maryland. To address this, Maryland selected a generation project for construction and ordered Load Serving Entities in Maryland to enter into a 20-year pricing contract with the generator to pay (or receive) the difference between the rate specified by the generator in the contract to construct the project and the amount the generator received for the sale of its capacity in the PJM market. The Court held that Maryland's program was preempted by the FPA because the program unlawfully seeks to have Maryland regulate wholesale rates: “. . . Maryland – through the contract for differences – requires CPV to participate in the PJM capacity auction, but guarantees CPV a rate distinct from the clearing price for its interstate sales of capacity to PJM. By adjusting an interstate wholesale rate, Maryland’s program invades FERC’s regulatory turf.”

Perhaps anticipating arguments to come, the Court went out of its way to distinguish what Maryland had done here from other types of state programs:

Our holding is limited: We reject Maryland's program only because it disregards an interstate wholesale rate required by FERC. . . . Nothing in this opinion should be read to foreclose Maryland and other States from encouraging production of new or clean generation through measures “untethered to a generator’s wholesale market participation.” . . . So long as a State does not condition payment of funds on capacity clearing the auction, the State’s program would not suffer from the fatal defect that

¹⁴ 136 S.Ct. 1288, 578 U.S. ___, (2016)(consolidated with *CPV Maryland LLC v. Talen Energy Marketing*).

renders Maryland's program unacceptable.

What does this mean for programs to support nuclear power plants?¹⁵ What about coal plants? Nowhere in the FPA does it say that state jurisdiction depends upon the nature of the generation being addressed. And what happens if wholesale market rules, particularly concerning price formation in capacity markets, don't lead to the results that the states desire?

There will be plenty of work for lawyers, indeed, and perhaps for you as these and other questions arise and are addressed by regulators and the courts.

C. Three Things You Need to Know About Electricity.

Any discussion of the FPA, its relevance, its performance, and its future reform, must be based on a clear understanding of the industry it governs. While that is a large subject, I offer three foundational elements that are too often overlooked, and that properly understood, will enable better policy formation.

1. Unlike oil, natural gas and liquid fuels, electricity cannot be stored in meaningful amounts.
2. Adequate supply is necessary, but not sufficient, to provide reliable electricity service. Supply and demand must be balanced in real time, an ever more challenging task.
3. There is no such thing as "The Grid."

1. Electricity now cannot be stored in meaningful amounts.

Electricity demand varies greatly over the course of a day and from season to season. Yet, because electricity cannot be stored economically and in meaningful amounts, that changing demand must be met in real time every second of every day over the course of the year by

¹⁵ For example, as part of its recently adopted Clean Energy Standard (<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-e-0302>), the New York Public Service Commission has authorized ratepayer subsidies for nuclear power plants, as well as wind and solar plants.

adjusting the amount of power flowing on the system. This is no small feat, particularly when you consider that, again unlike gases and liquids, electrons do not follow contract paths and are not controlled by valves. Instead electrons flow over the path of least resistance.

What this means is that as demand increases or decreases, power must be added or taken away at the correct places by adding or removing generation or demand. On a hot August day, as we've recently experienced, we need more generation than we need the rest of the year, except perhaps on those very cold days in January and February. The rest of the time, the generation that we need on those peak demand days is idle. RTOs/ISOs and utility operators try to manage this as efficiently as possible, but providing sufficient revenues to support the availability of generation that is needed only for short periods of time is an increasingly difficult challenge in wholesale markets, especially as more intermittent resources are added.

2. Adequate supply is necessary, but not sufficient, to provide reliable electricity service. Reliability requires balancing supply and demand every second.

In the 1981 electricity industry, the integrated utility serving load could plan for a margin of spare capacity to meet the needs in its service territory based on normal weather and the historic performance of its equipment. Utilities also planned generation fleets with the “peakiness” of electricity demand in mind. Large baseload plants, primarily nuclear and coal, were built to run most of the time (very high capacity factors) to take advantage of their low marginal costs. Natural gas was used for intermediate or peaking plants with higher fuel and marginal costs, but which could be turned on and off more easily and could follow the load as it moved up and down.

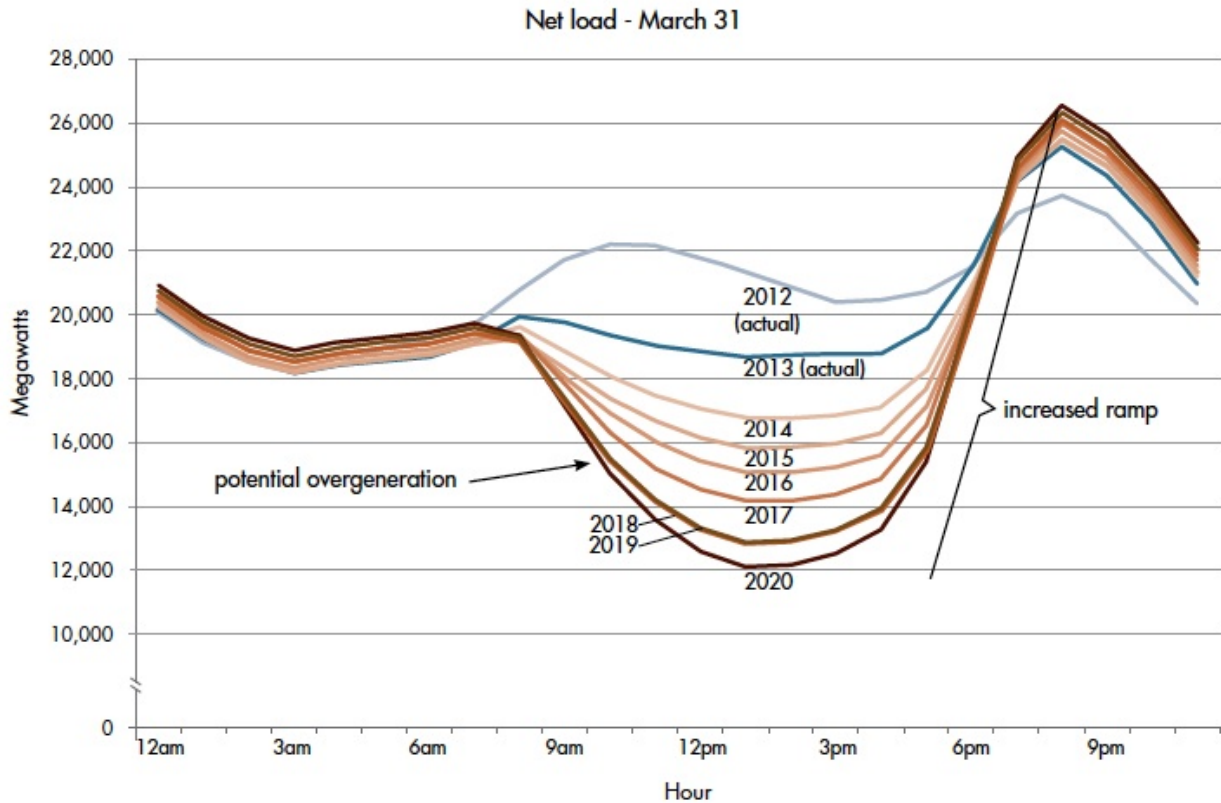
RTOs and ISOs now seek to replicate this kind of planning, but in a very different environment. One difference is the increasing role of intermittent generation such as wind and

solar. Significant amounts of these resources have been installed recently, especially in Texas, the West and the Midwest, and more will be installed in the future, but only a fraction of the installed capacity of intermittent renewable resources can be counted on to be available during peak periods of demand, *e.g.*, a hot summer afternoon. In certain areas of the country, the wind blows best at night when demand is lowest, or in the Spring and Fall when demand is lower. This has resulted in negative prices in energy markets at certain times of the day (or night) and has led to market distortions. Solar generation tends to increase as the day goes on, but then as the sun declines around 4 in the afternoon, that falls off quickly and must be replaced by other generation, just as peak demand in the day occurs with the overlap of business operations and residential evening use ramping up.

This has been studied by the California ISO, where this challenge is being presented most acutely given the large amounts of solar and wind generation in California. A Cal ISO paper¹⁶ describes what has come to be known as the “duck curve” (shown in Figure 2).

¹⁶ https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

Fig. 2: The “Duck Curve”



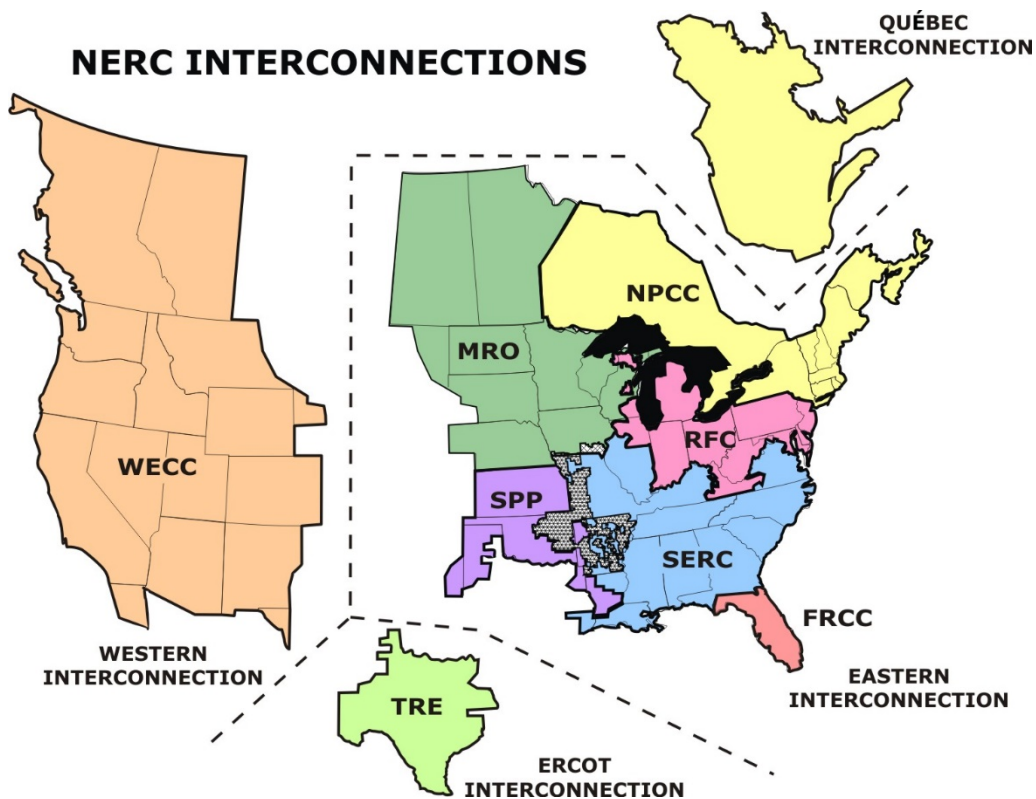
Source: California ISO

The bottom line is that using greater amounts of intermittent generating resources will require more resources that can ramp up and down quickly. How these ramping resources will be maintained and compensated is an ongoing challenge given that their owners need to recover their investment and a reasonable return on that investment, even if that resource operates only a small fraction of the day. Suffice it to say that in the 21st Century, the existence of reserve capacity margins is necessary, but not sufficient to ensure reliability. The challenge is to assure that supply and demand are met in real time, all the time.

3. There is no such thing as “The Grid.”

Many use the term, "the grid," as shorthand to describe the wires over which electricity is carried as opposed to generation. But as you now know, the distribution system is regulated by the states, while the transmission system is regulated by FERC. Moreover, even if the term is intended to describe just the bulk power system of high voltage transmission lines, there is not one single North American network; there are four: 1) the Eastern Interconnection; 2) the Western Interconnection; 3) ERCOT (most of Texas) and 4) Quebec, as shown in Figure 3.

Fig. 3: North American high voltage transmission networks



Source: NERC

These Interconnections are separate networks, with only limited DC lines interconnecting them. Neither Quebec nor ERCOT is subject to FERC FPA rate jurisdiction (ERCOT because of this separation).

Finally, there are some 500 transmission owners in the U.S. ranging from the large Federal Power Marketing Agencies, such as the Bonneville Power Administration and the Western Area Power Administration, to large and small investor owned utilities to large and small municipal utilities to large and small rural electric cooperatives. And there is the Tennessee Valley Authority. Of these transmission owners, only investor-owned utilities are fully subject to the Federal Power Act. Some municipal utilities and rural electric cooperatives are subject to state regulation; some are self-regulated. Some are members of RTOs/ISOS, many are not. I highlight this because nowhere else in the world is grid ownership and regulation this fragmented. Initiatives to reform or upgrade “the grid” that do not take this reality into account will not succeed.

Conclusion

The Federal Power Act has seen the electric industry evolve from a collection of city and regionally focused, vertically integrated utilities subject to pervasive cost of service regulation into a very different enterprise. As our economy becomes more electrified, and ever more dependent on reliable and affordable electricity, and as the demand increases for ever cleaner sources of electricity, consideration of whether the policies and lines of jurisdiction embodied in the Federal Power Act remain appropriate is wise and necessary. I hope this testimony is helpful in this effort and welcome your questions.

SUMMARY OF LINDA G. STUNTZ TESTIMONY

1. The Federal Power Act was enacted in 1935 to fill a regulatory gap. The Supreme Court had determined that the States under our Constitution could not regulate wholesale sales of interstate electric power, but could regulate retail sales and intrastate sales. The Federal Power Act was enacted to provide 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.
2. With significant amendments in the Energy Policy Acts of 1992 (PUHCA reform to enable more non-utility generation to flourish and FERC authority to order access to transmission service on a case-by-case basis) and 2005 (reliability, transmission incentives and increased authority to address market manipulation along with increased penalties), the FPA has remained largely intact. However, the structure and composition of the electric industry has changed dramatically in many parts of the country.
3. As our economy has grown, and as electricity markets and industry structure have evolved, federal jurisdiction under the Federal Power Act has grown. Wholesale markets for electricity administered by RTOs and ISOs now provide power across much, but not all, of the country. The restructuring of the electric industry was driven by multiple factors, but chiefly:
 - a. PURPA – demonstrated viability of competitive generation;
 - b. “rate shocks” due to over-budget nuclear plants following the Three Mile Island accident;
 - c. favorable experience with oil and natural gas deregulation, which drove a desire to rely on markets to a greater degree rather than cost of service regulation; and
 - d. technology development adapting jet engines fueled by natural gas for use by utilities.
4. Electric restructuring has taken many different forms across the country, but Supreme Court decisions earlier this year confirm that FERC jurisdiction under the FPA now extends to the purchase of demand management resources by RTOs and ISOs, and that states may not act in ways that “adjust an interstate wholesale rate,” even if the state is acting in a way it believes is necessary to preserve generation adequacy. Other pending state initiatives, *e.g.*, to protect nuclear power generation, are likely to raise similar questions.
5. One thing that has not changed since passage of the FPA is that electricity cannot be stored in meaningful amounts. This simple fact has large consequences. It means that supply and demand must be balanced every second to preserve reliable service. Doing this is becoming more challenging as intermittent resources play bigger roles.
6. There is no such thing as “The Grid.” North America is actually made up of four separate high voltage transmission networks: the Western Interconnection, the Eastern Interconnection, ERCOT (most of Texas) and Quebec, with only weak DC ties between these. In addition, there are some 500 transmission owners in the U.S.