THE NEW ENGLAND COUNCIL

State & Federal Rate Regulation of the Electric Power Industry: A History

A report prepared by

The New England Council

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Dear Friend of The New England Council:

I am pleased to provide you with "State and Federal Rate Regulation of the Electric Power Industry – A History," a report prepared by The New England Council staff.

Our objective in preparing the report is to provide the reader with basic information on the methods by which electricity is generated, transmitted and ultimately distributed to the retail consumer; how the rates are determined for both wholesale and retail electricity sales; the philosophy behind the legislative enactments and regulatory processes that lead to our current system; and the division between state and federal regulation of the electric power industry.

The New England Council promotes federal policies and initiatives that enhance the economy and quality of life within New England. Our diverse membership includes a number of companies involved in the energy and energy-related sectors of our economy, from fossil fuels to renewable sources, power generation to transmission, and high-tech energy manufacturing to legal and financial services. Together, they represent a broad array of the various stakeholder industries and groups participating in any debate over energy policy in New England and beyond. Our Energy and Environment Committee utilizes the expertise of our members in developing consensus-based approaches in an effort to address the region's energy challenges.

The goal of this report is to provide the reader - one lacking a background in or pre-existing understanding of the industry - with a basic understanding of the industry from its birth through the end of the 20th century, including a basic description of its regulatory history. In short, the "who," "what," "when," "where," and "why" of the industry, chronologically from start to present.

I hope that you find it to be informative and useful. Please let me know if you have any questions.

Sincerely,

James T. Brett
President & CEO

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Executive Summary

The electric power industry provides three principal services: the generation of electric energy, the transmission of that energy, and the distribution of that energy from the transmission facilities to individual customers. These services reflect the three principal types of facilities in the industry: generating facilities used to produce the electric energy, transmission facilities used to transmit that energy in bulk over long distances, and local distribution facilities used to distribute the energy to individual customers. Service is further divided into wholesale and retail service. Wholesale service involves the transmission or distribution of electric energy to customers that will resell the energy to end users. Retail service, by contrast, indicates transmission or distribution to end users. The three primary fuel sources for generating electric energy in the United States are coal, natural gas, and nuclear material, which together have provided between 85 and 90 percent of total net generation during the period 1997 to 2009. The relative contribution of these fuel sources has been shifting, though, with natural gas generation witnessing the fastest growth in recent years.

The electric power industry consists of 3,273 electricity providers, including 2,009 publicly owned utilities, 883 co-operatives, 210 investor-owned utilities and nine federal utilities. The private sector includes traditional utilities that are vertically integrated, generation-owning companies and power marketers, and transmission or distribution 'wires-only' companies. These companies may be privately owned or publicly traded. The public sector includes municipally owned utilities, public power districts, state agencies, irrigation districts and other government organizations, and at the federal level, the Tennessee Valley Authority and federal power marketing administrations. Rural electric co-operatives, formed by residents, operate in 47 states and represent about 10 per cent of sales and revenue. Power marketers buy and sell electricity, but usually do not own or operate generation, transmission, or distribution facilities. Public utilities are regulated by local, state, and federal authorities, with most electric cooperatives regulated by their board of directors. The American Public Power Association reported that in 2008, 39.9 per cent of generation came from investor-owned utilities, 38.8 per cent from non-utility power producers, 9.9 per cent from publicly owned utilities, 6.7 per cent from federal power agencies, and the remaining 4.7 per cent from cooperatives.

The Federal Energy Regulatory Commission (FERC) has jurisdiction over sales of power at wholesale in interstate commerce while retail sales of electricity are regulated at the state level. State utility commissions also retain regulatory authority over wholesale sales of electricity through purely intrastate sales, although in practice this class is limited to wholesale sales in Alaska, Hawaii and Texas, as well as wholesale sales by non-jurisdictional entities such as rural electric cooperatives, municipal utilities, and state- or federally created utilities. The Federal Power Act grants FERC authority over all interstate wholesale sales of electricity to ensure that wholesale rates are just, reasonable and not unduly discriminatory or preferential. FERC, the successor agency to the Federal Power Commission, also regulates interstate transmission service provided by transmission-owning public utilities and licenses hydroelectric facilities on navigable waterways.

Historically, at both the federal and state level, electricity sales have been regulated on the familiar public utility model: the rates have been set forth in filed tariffs, unreasonable or unduly discriminatory rates have been forbidden, and an administrative agency has been charged with overseeing rates and other related subjects. In many cases, the suppliers are vertically integrated and are engaged in electricity generation, intercity transmission, and local distribution.

The tariffs offered by various utilities will typically vary, even within a state. Traditionally, the customer paid one combined rate for both the power and its delivery, thus the industry refers to such sales as "bundled." To the extent that bundled sales are made directly to the end user of the electricity, they are also recognized as retail sales. Utilities may also sell the electricity they generate at wholesale to other utilities or other resellers of power, which then resell that power to their own customers. Thus, the same utility may use its facilities to serve both retail and wholesale customers. Vertically integrated utilities use their transmission facilities to move electricity over long distances, and use local distribution lines to deliver the electricity to the end user.

For those states that have adopted retail competition and that are located within the footprint of organized wholesale markets, many investor owned utilities have divested their generation and placed their transmission assets under the operational control of independent system operators. Thus, these utilities' primary function is providing distribution service and serving as the supplier of last resort for those retail customers that have not chosen an alternative retail energy service provider. Put differently, in the restructured industry, generation is no longer a monopoly service provided exclusively by vertically integrated electric companies to customers located within their service territories. Instead, customers have the option to enter into contracts with a variety of existing and new market participants who provide unbundled generation in a competitive marketplace. The price for such competitive generation is unregulated, but other important non-price aspects of the contractual relationship between competitive suppliers and the end use customer continue to be regulated by the relevant state's department of public utilities.

The most significant change for these end use customers is the opportunity to purchase generation from entities other than the investor owned utility in whose service territory they are located. In other words, as a result of restructuring, generation is no longer a monopoly service provided exclusively by public utilities to the customers located in their service territories. Customers are now given the opportunity to enter into agreements with a variety of existing and new market participants providing generation in a competitive marketplace.

In states that have not restructured, the system operates as it has since enactment of the Federal Power Act, with retail consumers paying one price that includes transmission, distribution, and generation. This is referred to as a bundled transaction. In states that have restructured, consumers are billed for separate transmission, distribution, and generation charges. This is referred to as unbundled electricity service.

State public utility commissions regulate the siting of all transmission and distribution lines within each state's borders as well as distribution charges and retail electric rates. The siting and construction of electric generation, transmission and distribution facilities has historically been a state and local process, although Congress in 2005 altered this historic arrangement by vesting final transmission siting authority with FERC in certain cases. In making siting decisions, state public utility commissions (PUCs) consider environmental, public health and economic factors. The PUCs generally exercise their authority in tandem with state environmental agencies or local zoning boards. A few states have a siting board or commission that provides a single forum where an electricity utility or independent developer can obtain all necessary authorizations to construct electric facilities. Other states have not consolidated the siting process, and electric utilities or independent developers are required to obtain the necessary permits separately from each of the relevant state and local agencies. State and local permits required for the construction of electric generation facilities include air permits and water use or discharge permits from the state environmental commission, and zoning and building permits from local commissions. Regulated utilities are often required to obtain a certificate of public convenience and necessity from the relevant PUC for the construction of generation, transmission and distribution facilities that will be subject to cost-base rate regulation. There is no equivalent federal certificate of public convenience or necessity required from FERC for the siting and construction of such electric generation, transmission or distribution facilities.

As with other, once fully regulated industries, legislators and regulators have over the last 25 years sought to introduce a greater measure of competition into the electric power industry. In the case of electric power, this has been achieved not by encouraging duplication of intercity transmission or local distribution networks - as is occurring in the telephone industry - but primarily by regulatory changes. These include imposing obligations on facilities' owners to carry power for other suppliers ("wheeling"), encouraging customers to choose among competing suppliers, and discouraging anti-competitive practices by a variety of means, including restructuring so as to reduce the incentives for anticompetitive behavior.

When combined with federal preemption law, one crucial result of these electric energy market regulatory reforms has been "a massive shift in regulatory jurisdiction from the states to the FERC." A “bright line" (somewhat) exists between state and federal jurisdiction, with wholesale power sales falling on the federal side of the line. FERC's jurisdiction to determine the reasonableness of wholesale rates is exclusive. Prior to 1996, vertically-integrated state monopolies would charge public consumers rates regulated by state entities and would purchase power from interstate utilities at rates regulated by FERC. The 1996 FERC reforms opened up local monopolies to competition among suppliers in the wholesale power market, resulting in a sharp increase in wholesale power sales - subject to FERC's exclusive jurisdiction - as electric utilities shopped among suppliers. Additionally, state electric utility restructuring laws resulted in a less active role for state regulators and a more active one for FERC, as the breakup of vertically integrated utilities created the need for many more wholesale transactions.

Despite the legal distinction between 'retail sales' ... and 'wholesale sales,'... essentially there is no functional distinction between generation and transmission facilities dedicated to retail and wholesale transactions. With respect to the distinction between transmission and distribution, the Supreme Court has observed that the test for determining transmission is "technological," i.e. that it depends on the flow of electrons on a set of interconnected wires, but that a 'legal standard" governs the limitation of federal jurisdiction that applies to local distribution. In other words, the local distribution limitation on federal jurisdiction ignores the physical and technical reality that "transmission [and] distribution.., are ... fused and interdependent ....”simply by identifying local distribution as the part of the interconnected wires system that coincides with retail sales. The fact that sellers and buyers are located within a single state, however, and that there may be lines between them located within that same state, does not divest FERC of jurisdiction given the interconnected nature of the electric grid. That is, “interstate commerce” has been interpreted to give the FERC jurisdiction when the transmission system “is interconnected and capable of transmitting [electric] energy across the State boundary, even though the contracting parties and the electrical pathway between them are within one State,” i.e., if the transaction is made over the “interconnected interstate transmission grid.” For example, in *Federal Power Comm' n v. Florida Power & Light Co.*, the Court held that a Florida utility was subject to federal jurisdiction because it was interconnected with a Florida utility which was, in turn, interconnected with a Georgia utility.

The consequence of these federal and state innovations in electricity regulation is that state regulators, despite their continued authority over rates charged directly to consumers, have much less actual authority over those rates than they did in the past. Local utilities now obtain power largely through wholesale contracts subject to FERC's exclusive regulation, rather than through self-generated and self-transmitted power. As a result, state regulators ordinarily must set retail rates with the wholesale rates as an established cost factor. FERC recognized this dynamic when issuing its reform orders, noting that customers will obtain more power delivered via "unbundled" wholesale transactions - in which the generation and transmission are separately traded rather than provided by an integrated local utility monopoly - making "[t]he exercise of our jurisdiction over rates, terms and conditions of unbundled retail transmission ... more important."

As a result, while the state and federal regulatory reforms of the 1990s did not end regulation of the electric energy industry, they did begin a new regulatory era. Although state regulators formerly took an extremely active role so as to ensure the just and reasonable retail power rates, FERC has exclusive jurisdiction over the wholesale rates that now drive the electric power market and, as a practical matter, largely determine the rates ultimately charged to the public.

State and Federal Rate Regulation of the Electric Power Industry – A History

Introduction

> "It is difficult to conceive of a more basic element of interstate commerce than electric energy, a product used in virtually every home and every commercial or manufacturing facility."[1]

President Jimmy Carter described the day that his childhood home in Georgia received electricity as the most important and happiest day of his life.[2] Electricity's importance has increased since then. In fact, our nation's energy market is essentially one-half oil and one-half electricity.[3] Nevertheless, the oil industry remains largely unregulated, at least at the retail level, while the generation, transmission and distribution of electricity remains subject to both federal and state regulation. As an example, the prices people pay for gasoline at the local service station or for home heating oil change every day while the rates paid by consumers for electricity are determined through a formal government rate setting process. This is partially based on electricity's unique properties. Since electricity cannot easily be stored and because it must be available on demand, the electricity system must allow for continual generation, transmission, and distribution, meaning the system must operate 24 hours a day, every day of the week.[4] So while the electric power industry has been restructured with most states allowing end users to purchase electricity at market prices, its transmission and ultimate distribution to the end-user still require significant governmental oversight.

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[1] *FERC v. Mississippi*, 456 U.S. 742, 757 (1982).

[2] Steven Ferrey, "Exit Strategy: State Legal Discretion to Environmentally Sculpt the Deregulating Electric Environment," 26 Harvard Environmental Law Review 109 (2002), citing Interview by Katie Couric with President Jimmy Carter, Today Show, NBC Television (Oct. 30, 2000).

[3] See Joseph P. Tomain, "The Past and Future of Electricity Regulation," 32 Envtl. L. 435 (2002).

[4] If electricity were any other energy form, such as natural gas or oil, its energy value could be saved and conserved. Oil and gas can be stored in the system without significant diminution. However, electricity is a unique energy form: It cannot be stored or conserved with any efficiency. Therefore, electricity has substantially different value at different hours of the day, different seasons of the year, and at different places in the utility system.

In terms of our economy, one could argue that electrical energy or power surpasses oil and gasoline in importance. Inadequate supplies of power would affect all electrical appliances and lights, light and heavy industry, electrified public transit, most commercial transactions, and could result in significant data losses in banks and in the national defense system.

The electric power industry, however, is complex and difficult to understand - populated as is with its "QFs" and "EWGs", "ISOs" and "RTOs", "LSEs" and "NUGs", "declining block ratemaking", "full avoided cost", "stranded costs", "open access non-discriminatory transmission tariffs", "non-demand demand curve" and so on – and difficult not only for the lay person, but for those within the industry as well. The following comments from several recent decisions of the United States Court of Appeals are instructive:

> For those unfortunate souls not steeped in the vernacular of electricity regulation, a generator's unforced capacity (UCAP) is its installed capacity (ICAP) discounted or "derated" by its forced outage rate (or equivalent forced outage rate demand (EFORd))... The translation of installed into unforced capacity can be represented mathematically as follows: UCAP = ICAP × (1 - EFORd);[5]
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> It would have been helpful if the parties had actually defined "capacity" before delving into the intricacies of New England's capacity market. Also, the briefs would have been much easier to read if the parties had used fewer acronyms;[6] and
>
> The term "non-public entity," or its equivalent "non-public utility," can be confusing even to the careful reader. The FPA defines a "public utility" as "any person who owns or operates facilities subject to the jurisdiction of [FERC. . .]" FERC refers to utilities wholly-owned by governmental entities as "non-public utilities" or "non-public entities" because governmental entities are exempt from the FPA and therefore exempt from FERC's jurisdiction when they provide transmission services.[7]

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[5] *Keyspan-Ravenswood LLC v. Federal Energy Regulatory Commission*, 474 F.3d 804, 807 (D.C. Cir. 2007).

[6] *Maine Public Utilities Commission v. Federal Energy Regulatory Commission*, 520 F.3d 464, n.1 (D.C. Cir. 2008).

[7] *Transmission Agency of Northern California v. Federal Energy Regulatory Commission*, 495 F.3d 663, n.4 (D.C. Cir. 2007).

Yet generating electricity itself is actually rather simple. Anyone who has received a shock after walking across a rug or carpet and touching something received a charge of static electricity. Electricity is a form of energy characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change.[8] Basically, it is the movement of electrons between atoms, which generates light and heat.

Two laws of physics applicable to electricity make regulating it difficult. Electricity always follows the path of least resistance rather than the shortest path, but otherwise takes no predictable path from its generation to end use. And, since electrons basically travel at the speed of light, when someone turns on a lamp, he or she really has no way of knowing who actually generated or produced the electricity used by it. Likewise, most purchasers do not buy specific electricity from a specified producer. Electricity is also unique in that it cannot be stored effectively and therefore must be generated as needed, a characteristic requiring the industry that produces and delivers it to have sufficient and reliable capacity to serve that demand.

Electric energy is defined as the ability of an electric current to produce work, heat, light, or other forms of energy.[9] Electric power is the rate at which electricity does work. The unit of measure for electric power is a watt, although for billing purposes kilowatt is used. The maximum amount of electric power that a piece of electrical equipment can accommodate is the capacity or capability of that equipment. The unit of measure for electric energy is a watt-hour. The typical electric bill will charge per kilowatt-hour, which is the equivalent of 1,000 watt-hours. Electric energy is measured over a period of time and has a time dimension as well as an energy dimension. The amount of electric energy produced or used during a specified period of time by a piece of electrical equipment is referred to as generation or consumption.[10]

Electricity is the product of electric generators. In an electric power plant or station using a simple generator, fuels such as natural gas, coal, and occasionally fuel oil are burned in a boiler to turn water

[8] Energy Info. Admin., U.S. Dep't of Energy, Annual Energy Review 392 (2009), available at www.eia.doe.gov/emeu/aer/pdf/aer.pdf.

[9] See Energy Info. Admin., U.S. Dep't of Energy, Annual Energy Review 392 (2009), available at www.eia.doe.gov/emeu/aer/pdf/aer.pdf.

[10] Id.

into steam. Under high pressure, the steam turns the blades of a turbine that spins a rotating magnet called the "rotor," which turns inside large, stationary coils of copper wire called the "stator." When the rotor rotates through the magnetic field, it generates a flow of electric current through the copper coils of the stator.

In a nuclear plant, steam is produced by the controlled splitting of uranium atoms in a process known as nuclear fission. In a hydropower plant, moving water provides the energy to turn the turbine blades. With wind turbines, the flow of wind turns the turbine blades, which then turn an electric generator. With solar power, sunlight is converted into electricity through solar cells that absorb the sun's energy.

Using steam turbine generators fueled by coal and uranium is the most common method used in the United States to generate electricity. However, more than one-half of the electricity generated is lost in the conversion process, usually as heat, meaning that it is not converted into useable electricity.

Once generated, the electricity is sent from the power station to a step- up substation where its voltage is increased. From there, it flows over a transmission line to the area where the electricity is needed, where the previous process is reversed and its voltage is decreased or stepped-down at another substation. At the local distribution centers, the power flow is split to send power to a number of primary feeder lines that lead to other transformers that again step down and feed the power to secondary service lines that in turn deliver the power to the utility's customers.[11]

I. Industry Overview

The electric power industry provides three principal services: the generation of electric energy, the transmission of that energy, and the distribution of that energy from the transmission facilities to

[11] An electric power system consists of three divisions: generation, transmission, and local distribution. Electricity is generated at power plants where a fuel such as coal, gas, oil, uranium or hydro power is used to spin a turbine which turns a generator to generate electricity. Generating stations continuously feed electric energy into a web of transmission lines (loosely referred to as 'the grid') at very high voltages. The transmission lines in turn feed "substations (essentially transformers) that reduce voltage and spread the power from each transmission line to many successively smaller distribution lines, culminating at the retail user. Brief for Electrical Engineers et al. as Amici Curiae in *New York v. F.E.R.C.*, 535 U.S. 1 (2002). P. Fox-Penner, "Electric Utility Restructuring: A Guide to the Competitive Era," 5 (1997).

individual customers. These services reflect the three principal types of facilities in the industry: generating facilities used to produce energy, transmission facilities used to transmit energy in bulk over long distances (generally at higher voltages), and local distribution facilities used to distribute the energy to individual customers (generally at lower voltages). Service is further divided into wholesale and retail service. Wholesale service involves the transmission or distribution of electric energy to customers that will resell the energy to end users. Retail service, by contrast, denotes transmission or distribution to end users.[12] The three primary energy sources for generating electric power in the United States are coal, natural gas, and nuclear energy, which together have provided between 85 and 90 percent of total net generation during the period 1997 to 2009. The relative contribution of these energy sources has been shifting, though, with natural gas generation witnessing the fastest growth in recent years.[13]

The electric power industry consists of 3,273 electricity providers, including 2,009 publicly owned utilities, 883 co-operatives, 210 investor-owned utilities and nine federal utilities. The private sector includes traditional utilities that are vertically integrated, generation-owning companies and power marketers, and transmission or distribution 'wires-only' companies. These companies may be privately owned or publicly traded. The public sector includes municipally owned utilities, public power districts, state agencies, irrigation districts and other government organizations, and at the federal level, the Tennessee Valley Authority (TVA) and federal power marketing administrations. Rural electric co-operatives, formed by residents, operate in 47 states and represent about 10 per cent of sales and revenue. Power marketers buy and sell electricity, but usually do not own or operate generation, transmission, or distribution facilities. Public utilities are regulated by local, state, and federal authorities, with most electric cooperatives regulated by their board of directors.[14] The American Public Power Association reported that in 2008, 39.9 per cent of generation came from investor-owned utilities, 38.8 per cent from non-utility power producers, 9.9 per cent from publicly owned

[12]See *Transmission Access Policy Study Group v. FERC*, 225 F.3d 667, 690-91 (D.C.Cir.2000), aff'd sub nom. *New York v. FERC*, 535 U.S. 1, 122 S.Ct. 1012, 152 L.Ed.2d 47 (2002).

[13] "Electric Power Industry 2009:Year in Review," available at http://www.eia.gov/cneaf/electricity/epa/epa_sum.html.

[14] U.S. Energy Information, Composition of Electric Entities in the United States, 2007 at http://www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html#traditional.

utilities, 6.7 per cent from federal power agencies, and the remaining 4.7 per cent from cooperatives.[15]

The private companies that produce the bulk of our electricity are called "investor-owned utilities." Most of these utilities are vertically integrated, operating at all three levels of the electric power industry: (1) they generate (or produce) electricity, (2) they transmit electricity from generators to local distributors, and (3) they distribute electricity at the local level.[16] Despite being fully integrated, these companies usually do not distribute only electricity that they themselves have generated. Rather, groups of utilities have formed power "pools" through which they coordinate the generation, transmission, and distribution of electricity throughout a large geographical area. The goal of these power pooling arrangements is to enhance reliable and efficient electric service by matching ever-changing customer demands with available low-cost supply sources. Because of power pooling, a vertically integrated utility often ends up distributing electricity generated by a different, interconnected company.[17] Even without clear pooling arrangements, the many physical interconnections among utilities, combined with the tendency of electricity to flow instantaneously along interconnected lines to wherever it is demanded, make it likely that electricity distributed by one utility will be supplied by another. One legal consequence of these interconnections and pooling arrangements is that most electricity flows "interstate," permitting federal, as well as state, regulation of electricity.[18]

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[15] "Generation Statistics by Fuel and Ownership," available at http://www.appanet.org/files/PDFs/GenerationStatistics.pdf.

[16] See Joskow, "Mixing Regulatory and Antitrust Policies in the Electric Power Industry: The Price Squeeze and Retail Market Competition in Antitrust and Regulation," 175-78 (F.M. Fisher ed. 1985); Meeks, "Concentration in the Electric Power Industry: The Impact of Antitrust Policy," 72 Colum.L.Rev. 64, 67-69 (1972).

[17] See generally 16 U.S.C. Sec. 824a-1 (governing pooling agreements); New England Power Pool Agreement, 56 F.P.C. 1562 (1976) (describing the New England Power Pool), petitions for review denied, *Municipalities of Groton v. FERC*, 587 F.2d 1296 (D.C.Cir.1978); C. Phillips, Jr., "The Regulation of Public Utilities," 585-92 (1988) (discussing coordination among electric utilities).

[18] See *Cincinnati Gas & Elec. Co. v. FPC*, 376 F.2d 506, 507-09 (6th Cir.), *cert. denied*, 389 U.S. 842, 88 S.Ct. 77, 19 L.Ed.2d 106 (1967); *Public Serv. Co. v. FPC*, 375 F.2d 100 (7th Cir.), *cert. denied*, 387 U.S. 931, 87 S.Ct. 2054, 18 L.Ed.2d 992 (1967); see generally *FPC v. Florida Power & Light Co.*, 404 U.S. 453, 92 S.Ct. 637, 30 L.Ed.2d 600 (1972).

The Federal Energy Regulatory Commission (FERC) has jurisdiction over sales of power at wholesale in interstate commerce while retail sales of electricity are regulated at the state level, with variation from state to state. The state utility commissions also retain regulatory authority over wholesale sales of electricity through purely *intrastate* sales, although in practice this class is limited to wholesale sales in Alaska, Hawaii and Texas, as well as wholesale sales by non-jurisdictional entities such as rural electric cooperatives, municipal utilities, and state- or federally created utilities. The Federal Power Act grants FERC authority over all jurisdictional wholesale sales of electricity to ensure that wholesale rates are just, reasonable and not unduly discriminatory or preferential. FERC, the successor agency to the Federal Power Commission, also regulates interstate transmission service provided by transmission-owning public utilities and licenses hydroelectric facilities on navigable waterways.

Historically, at both the federal and state level, electricity sales have been regulated on the familiar public utility model: the rates have been set forth in filed tariffs, unreasonable or unduly discriminatory rates have been forbidden, and an administrative agency has been charged with overseeing rates and other related subjects (such as extension of lines, mergers, and the like).[19] In many cases, the suppliers are vertically integrated and are engaged in electricity generation, intercity transmission, and local distribution.

Although FERC had traditionally employed a cost-of-service ratemaking inquiry when reviewing wholesale rates, more recently it has also allowed the market to determine wholesale power rates where it has found that the seller and its affiliates lack or have mitigated vertical or horizontal market power, and have adequately restricted affiliate transactions with captive customers. Once FERC approves a jurisdictional entity's generic market tariff, the jurisdictional entity is free to negotiate with other parties in the marketplace over the specific rate charged for the wholesale sale without having to seek FERC approval of the agreement prior to commencing service. FERC determines the rates, terms and conditions of transmission service in interstate commerce under the Federal Power Act's just and reasonable standard based on cost-of-service ratemaking principles. Where retail customers buy electricity from a wholesale provider, and the electricity is then delivered over distribution facilities by the load serving entity, the state determines the rates, terms and conditions of such distribution service. Because distribution services are considered to be a natural monopoly, state public utility commissions generally review tariffs for distribution services proposed by the utilities via a traditional cost-of-service ratemaking inquiry. State utility commissions generally approve the tariffs submitted by utilities if they are just and reasonable - meaning utilities were required to charge rea-

[19] See generally *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 20 (1990), *cert. denied*, 499 U.S. 931 (1991).

sonable prices, to charge comparable prices to similar classifications of consumers, to give consumers access to services under similar conditions, and to serve all consumers within their service areas as well.

The tariffs offered by various utilities will typically vary, even within a state. Traditionally, the customer paid one combined rate for both the power and its delivery, thus the industry refers to such sales as "bundled." To the extent that bundled sales are made directly to the end user of the electricity, they are also recognized as retail sales. Utilities may also sell the electricity they generate at wholesale to other utilities or other resellers of power, which then resell that power to their own customers. Thus, the same utility may use its facilities to serve both retail and wholesale customers. Vertically integrated utilities use their transmission facilities to move electricity over long distances, and use local distribution lines to deliver the electricity to the end user.

For those states that have adopted retail competition and that are located within the footprint of organized wholesale markets, many IOUs have divested their generation and placed their transmission assets under the operational control of independent system operators (ISOs). Thus, these utilities' primary function is providing distribution service and serving as the supplier of last resort for those retail customers that have not chosen an alternative retail energy service provider. Put differently, in the restructured industry, generation is no longer a monopoly service provided exclusively by vertically integrated electric companies to customers located within their service territories. Instead, customers have the option to enter into contracts with a variety of existing and new market participants who provide unbundled generation in a competitive marketplace. The price for such competitive generation is unregulated, but other important non-price aspects of the contractual relationship between competitive suppliers and the end use customer continue to be regulated by the relevant state's department of public utilities.

The most significant change for these end use customers is the opportunity to purchase generation from entities other than the IOU in whose service territory they are located. In other words, as a result of restructuring, generation is no longer a monopoly service provided exclusively by public utilities to the customers located in their service territories. Customers are now afforded the opportunity to enter into agreements with a variety of existing and new market participants who will provide generation in a competitive marketplace.

In states that have not restructured, the system operates as it has since enactment of the Federal Power Act, with retail consumers paying one price that includes transmission, distribution, and generation. This is referred to as a bundled transaction. In states that have restructured, consumers are billed for separate transmission, distribution, and generation charges. This is referred to as unbundled electricity service.

State public utility commissions regulate the siting of all transmission and distribution lines within each state's borders as well as distribution charges and retail electric rates. The siting and construction of electric generation, transmission and distribution facilities has historically been a state and local process, although Congress in 2005 altered this historic arrangement by vesting final transmission siting authority with FERC in certain cases.[20] In making siting decisions, state public utility commissions (PUCs) consider environmental, public health and economic factors. The PUCs generally exercise their authority in tandem with state environmental agencies or local zoning boards. A few states have a siting board or commission that provides a single forum where an electricity utility or independent developer can obtain all necessary authorizations to construct electric facilities. Other states have not consolidated the siting process, and electric utilities or independent developers are there required to obtain the necessary permits separately from each of the relevant state and local agencies. State and local permits required for the construction of electric generation facilities include air permits and water use or discharge permits from the state environmental commission, and zoning and building permits from local commissions. Regulated utilities are often required to obtain a certificate of public convenience and necessity from the relevant PUC for the construction of generation, transmission and distribution facilities that will be subject to cost-base rate regulation. There is no equivalent federal certificate of public convenience or necessity required from FERC for the siting and construction of such electric generation, transmission or distribution facilities.

There are also nonutility power producers in the United States, made up of qualifying facilities, combined heat and power plants and independent power producers.

The Public Utilities Regulatory Policies Act of 1978 (PURPA) made possible the emergence of a group of nonutility electricity-generating companies called qualifying facilities or QFs. Under PURPA, small power producers and cogenerators receive status as a QF by meeting certain requirements for ownership, operating methods, and efficiency. Those requirements were established by the FERC. Before passage of the Energy Policy Act of 2005, utilities were required to purchase QF power at avoided cost. That is the incremental cost the utility would otherwise incur to supply power otherwise available for purchase from the QF. This requirement was eliminated for QFs operating in competitive wholesale markets meeting certain requirements prescribed by the FERC.

[20] See EPAct 2005, discussed infra.

Facilities which produce electricity and another form of useful thermal energy through the sequential use of energy (usually heat or steam for industrial processes or heating/cooling purposes) are called combined heat and power (CHP) plants, many of which have status as QFs. CHP plants are primarily engaged in business activities (such as agriculture, mining, manufacturing, transportation, or education). The electricity that they generate is mainly for their own use, but any excess may be sold in the wholesale market.

The primary business of independent power producers (IPPs) is to generate electricity. However, they have no assigned service territory. Their service obligation is defined by the terms of their power sales contracts. IPPs are precluded from owning transmission facilities and must use transmission facilities of other utilities to deliver power to their customers. By definition, a facility that has QF status is not an IPP. Some IPPs are exempt wholesale generators (EWGs), and as such are exempt from certain FERC financial reporting and ownership restrictions. IPPs sell power at market-based rates subject to receiving FERC authorization.

A. Generation, Transmission and Distribution

The electrical industry is comprised of three segments – generation, transmission and distribution.

The generation segment has three basic forms. Base load generators are operated continuously to meet customer demand.[21] These units have high capital costs but the lowest operating costs. Base-load plants are most often nuclear powered or coal fired. Intermediate load plants, such as oil fired plants, are used as demand rises. When demand is highest, peak load generators, with low capital costs and high operating costs, are brought into operation. These various generators must be kept in balance to meet demand. The difficult part of the balance is to have base-load generation for constant and assured demand, and enough peaking capacity to meet demand increases without having too much unused generating capacity at its peak, also referred to as excess capacity. To promote economy and reliability, electric utilities interconnect with each other and transfer their output as demands vary.

Once generated, electricity must be transmitted to an end user or to a local distributer through high voltage lines ranging from 69 kilovolts (kv) to 745 kv. Transmission lines generally carry bulk-power transfers between utilities and move power to load centers. In addition to the 167,000 miles of high voltage transmission lines, the transmission system includes about another 300,000 miles of lower

[21] Base load is the minimum energy level a company must provide to its customers on a constant basis.

voltage transmission lines, although the division between the transmission and distribution systems is not clear-cut. Depending on the application, a 69kv line might be considered a transmission or distribution line.[22]

Distribution lines move power to ultimate customers. Sub-transmission is sometimes considered transmission and other times considered distribution for regulatory purposes. Transmission lines and distribution lines are categorized by their voltage rating. In general, transmission lines are typically rated 230 kv and higher (765 kv is the highest installed). Sub-transmission systems are 69 kv to 138 kv, and distribution systems are rated less than 69 kv.

Thus, an electric power system is an integrated system consisting of generating plants, high voltage transmission lines, local distribution facilities, communication, and other facilities that must operate as a contemporaneous network in real-time or in a synchronous manner to provide stable and reliable electricity to consumers. The flow of electricity within the system is maintained and controlled by dispatch centers. It is the responsibility of the dispatch center to match the supply of electricity with the demand for it. In order to carry out its responsibilities, the dispatch center is authorized to buy and sell electricity based on system requirements. Authority for those transactions has been pre-approved under interconnection agreements signed by all the electric utilities physically interconnected or with coordination agreements among utilities that are not connected.

1. Bulk Power System

The bulk power system[23] in the United States has evolved into three major interconnected systems (power grids), within which regional transmission organizations and independent system operators

[22] For more information see Douglas R. Hale, "Electricity Transmission in a Restructured Industry: Data Needs for Public Policy Analysis, Energy Information Administration (EIA)," DOE/EIA-0639, Washington, DC, December 2004, p. 16, www.eia.doe.gov/cneaf/electricity/page/transmission/DOE_EIA_0639.htm.

[23] The bulk power system consists of the generation and transmission system and the wholesale financial transactions associated with power and transmission transfers on the system. It includes wholesale purchases and sales of electricity, transmission reservations to wheel that power, and potential interactions with power pools and independent system operators. Access to the bulk power market is reserved for wholesalers, including power producers, power retailers, and a few very large direct-use customers.

in some geographic regions exist to operate transmission systems. The major networks consist of extra-high-voltage connections between individual utilities designed to permit the transfer of electrical energy from one part of the network to another. These transfers are restricted, on occasion, because of a lack of contractual arrangements or because of limited transmission capability. The three networks are the Eastern Interconnected System, the Western Interconnected System, and the Texas Interconnected System.

The Texas Interconnected System is not interconnected with the other two networks (except by certain direct current lines). The other two networks have limited interconnections to each other. Both the Western and the Texas Interconnect are linked with different parts of Mexico. The Eastern and Western Interconnects are completely integrated with most of Canada or have links to the Quebec Province power grid. Virtually all United States' utilities are interconnected with at least one other utility by these three major grids. The exceptions are in Alaska and Hawaii. The bulk power system makes it possible for utilities to engage in wholesale (sales for resale) electric power trade. Wholesale trade has historically played an important role, allowing utilities to reduce power costs, increase power supply options, and improve reliability.[24]

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[24] See Brief for Electrical Engineers et al. as Amici Curiae in *New York v. F.E.R.C.*, 535 U.S. 1 (2002) (internal citations omitted):

> [T]ransmission is inherently interstate. It takes place over a network or grid, which consists of a configuration of interconnected transmission lines that cross state lines. These lines are owned and operated by the Nation's larger utilities. No individual utility, however, has "'control over the actual transfers of electric power and energy with any particular electric system with which it is interconnected.' " Electricity flows at extremely high voltages across the network in uncontrollable ways and cannot be easily directed through a particular path from a specific generator to a consumer. The "'[t]ransfer of electricity from one point to another will, to some extent, flow over all transmission lines in the interconnection, not just those in the direct path of the transfer.'" The energy flow depends on "where the load (demand for electricity) and generation are at any given moment, with the energy always following the path (or paths) of least resistance." The paths, however, "change moment by moment." And "[t]rying to predict the flow of electrons is akin to putting a drop of ink into a water pipe flowing into a pool, and then trying to predict how the ink drop will diffuse into the pool and which combination of outflow pipes will eventually contain ink...."
>
> Nonetheless, buyers and sellers do negotiate particular contract paths, "'route[s] nominally specified in an agreement to have electricity transmitted between two points.'" In practice,

Law Professor Steven Ferrey described the transmission grid in the following manner:

> The transmission grid moving electricity becomes a critical legal and physical path when centralized electricity is traded broadly across a large geographic area. It is congested at key nodes, inhibiting competition in the delivery of centralized power. Electrons do not flow from point of production to the point of delivery. Some have argued that electricity use is better visualized as a "lake." Many suppliers put water into the lake, while other users take it out. However, a sale by a supplier on one side of the lake does not mean that the user withdrew the exact same water molecules that the seller put into the lake on the other side.
>
> Yet a better metaphor for the transmission system may be a series of ponds. Each pond represents a regional transmission network. Water is injected into the pond by generators and withdrawn by consumers. Where there is an imbalance between supply and demand in an individual pond, there is a canal system for import and export, which represents the transmission network. These canals are owned by multiple owners, and a fee is charged for reserving the use of a particular canal. Most regional transmission areas in the United States require the import or export of power to keep them in balance.[25]

And, the United States Supreme Court concluded that the very interconnection of utilities to the interstate grid results in a commingling of electricity and energy flows across state lines in interstate commerce.[26]

Voltage can be likened to the pressure inside the transmission system. Constraints on the maximum voltage levels are set by the design of the transmission line. If voltage levels exceed the maximum,

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> however, it is quite possible that most of the power will never flow over the negotiated transmission lines. The transactional arrangements, therefore, bear little resemblance to the physical behavior of electricity transmitted on a power grid and, as such, it is impossible for either a utility or FERC to isolate or distinguish between the transmission used for bundled or unbundled wholesale or retail sales.

[25] See Steven Ferrey, "Exit Strategy: State Legal Discretion to Environmentally Sculpt the Deregulating Electric Environment," 26 Harvard Environmental Law Review 109 at n. 46 (2002).

[26] See *FPC v. Florida Power & Light Co.*, 404 U.S. 453 (1972).

short-circuits, radio interference, and noise may occur. Low voltages are also a problem and can cause customers' equipment to malfunction and can damage motors.

Thermal constraints, voltage constraints, and system operating constraints[27] limit transfer capability within the transmission system. Thermal constraints limit the capability of a transmission line or transformer to carry power because the resistance created by the movement of electrons produces heat. Overheating causes the transmission line to expand, weakening it and reducing its expected life, and also causing the line to sag between its supporting towers. This presents safety issues as the lines approach the ground as well as reliability concerns. If a transmission line comes in contact with the ground, trees, or other objects, the transmission line will go offline and not be able to carry power.

Also, the transmission grid was not built in conformance with a plan like the interstate highway system. The grid is a patchwork of systems originally built by individual utilities as isolated transmission islands to meet local needs. These small networks were unsystematically linked when utilities decided to jointly own power plants or to connect to neighboring companies to facilitate power sales.[28] The grid eventually evolved into the three major "interconnections." Within each interconnection the AC grid must be precisely synchronized so that all generators rotate at 60 cycles per second (synchronization failure can cause damage to utility and consumer equipment, and cause blackouts).[29] There are

[27] System operating constraints refer to reliability and security. Maintaining synchronization among generators on the system as well as preventing the collapse of voltages are major aspects of the role for transmission operators (within each interconnection, all generators rotate in unison at a speed that produces a consistent frequency of 60 cycles per second).

[28] As recently as 1962 the systems that now constitute the Eastern Interconnection were not fully connected. Securities and Exchange Commission, Prepared Direct Testimony of Paul B. Johnson on Behalf of the American Electric Power System, *In the Matter of American Electric Power Company, Inc.*: File No. 3-11616, December 7, 2004, pp. 9 and 11, www.sec.gov/divisions/investment/opur/filing/3-11616-120704aepex2.pdf.

[29] The eastern interconnection is perhaps the world's largest synchronized machine. Spread across the eastern half of the United States, hundreds of large and small generators (all of which are connected electrically and spin in perfect unison) generate electricity at 60 hertz (cycles per second). See "Is Our Power Grid More Reliable One Year after the Blackout," the U.S. Dept. of Energy (2004).

only eight low capacity links (called "DC ties") between the Eastern, Western, and ERCOT Interconnections. In effect, the 48 contiguous states have three separate grids with limited connections.[30]

The transmission grid is owned by several hundred private and public entities. FERC approves transmission line projects, and sets transmission rates. While FERC must approve transmission projects proposed by jurisdictional utilities and establishes rates, a project also needs a siting permit from every state the line will traverse. The one area in which FERC's authority covers all entities in the 48 contiguous states is oversight of the reliability of the "bulk power system," including transmission. The bulk power system includes the transmission system but not distribution lines.[31]

Because so few retail utilities actually own and operate their own generation, they rely on other utilities, usually the largest utilities in the region, to provide for the transmission of power to them in a process called wheeling. Wheeling power requires the use of transmission lines that are owned by multiple utilities. This use needs to be managed so that power can be tracked as it flows from utility to utility across the grid. Utilities manage the operation of generation, transmission, and transmission maintenance from facilities called control centers. Power that is wheeled through a system is coordinated between adjacent control centers.

The benefit of an extensive transmission system is that it provides access to generation across a much broader area. However, an extensive transmission system also has costs, in addition to the expense of construction and maintenance. Reliance on power from distant power plants delivered over

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[30] The direct current DC ties permit limited power transfers between the interconnections without synchronizing the systems. For example, a synchronization problem in the Eastern Interconnection cannot propagate across a DC tie into the Western Interconnection. ERCOT has two ties with the Eastern Interconnection and there are six ties between the Eastern and Western Interconnections. See Bill Bojorquez and Dejan J. Sobajic, "AC-DC Ties @ ERCOT," The 8th Electric Power Control Centers Workshop, Les Diablerets, Switzerland, June 6, 2005. The typical capacity of these ties appears to be about 200 megawatts. Total generating capacity in the United States is about one million megawatts.

[31] As defined in 16 U.S.C. s. 824o (added by the Energy Policy Act of 2005), "The term 'bulk-power system' means - (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy."

long transmission lines leaves a utility vulnerable to disruptions on the power lines. Overall, the reliability of the power grid in the United States is the responsibility of a voluntary organization known as the North American Electric Reliability Council (NERC) which includes the three interconnected pools and the Hydro-Quebec System. This is an organization of utilities which was formed in 1968 in reaction to a power failure in the Northeastern United States that resulted in blackouts in New York City along with other major disruptions. NERC has responsibility for setting reliability standards and for planning coordination of the interconnected power system.[32]

The Energy Policy Act of 2005 (EPACT05) addresses electric reliability and infrastructure investment.[33] In part, Title XII creates an electric reliability organization (ERO) that is to enforce mandatory reliability standards for the bulk-power system. All ERO standards are to be approved by FERC. Under this title, the ERO could impose penalties on a user, owner, or operator of the bulk-power system that violates any FERC approved reliability standard. FERC approved the North American Electric Reliability Corporation (NERC), a wholly owned subsidiary of the North American Electric Reliability Council (NERC Council), as the ERO.[34] NERC Council is a nonprofit corporation whose membership is composed of the eight regional reliability councils.[35]

The distribution segment provides retail delivery of power to customer premises. Distribution service is the component of electric service that takes place on the customer side of distribution substations. It is composed of two elements: (1) a physical component, consisting of the equipment (i.e., the substations, poles, wires, and transformers that are readily observable along roadways) involved in receiving high voltage electricity from the bulk power system and delivering the electricity, at re-

[32] NERC was created in 1968, in the wake of the northeastern blackout of 1965. For a summary of NERC history and timeline see www.nerc.com/page.php?cid=1|7|11.

[33] P.L. 109-58.

[34] *Order Certifying North American Electric Reliability Corporation As the Electric Reliability Organization in Ordering Compliance Filing*, 116 FERC, 61,062. Docket No. RR06-1-000. Issued July 20, 2006.

[35] The regional reliability councils are: Electric Reliability Council of Texas, Inc. (ERCOT), Florida Reliability Coordinating Council (FRCC), Midwest Reliability Organization (MRO), Northeast Power Coordinating Council (NPCC), Reliability First Corporation (RFC), Southeastern Reliability Council (SERC), Southwest Power Pool, Inc. (SPP) and Western Electricity Coordinating Council (WECC).

duced voltages, to consumers; and (2) a customer service component, consisting of metering, billing, addressing customer inquiries and complaints, and other services. It is performed primarily by IOUs, electric cooperatives and municipal utilities.

These utilities distribute electricity to three customer classes: residential; commercial; and industrial, each consuming approximately 1 trillion kwh annually. The residential sector generally uses electricity for heating, air conditioning, lighting, refrigeration, and entertainment. The commercial sector includes non-manufacturing businesses, such as hotels, restaurants, retail stores, and the like and has needs similar to the residential sector. Finally, the industrial sector includes construction, manufacturing, mining, agriculture, and the like and this sector consumes electricity not only for heating, lighting, and refrigeration, but also as a primary input into manufacturing processes such as work performed by electric furnaces in steel plants.

The utilities use customer classifications for planning and for determining their sales and revenue requirements (cost-of-service) in order to derive their rates. Utilities typically employ a number of rate schedules for each customer class. The alternative rate schedules reflect consumers' varying consumption levels and patterns and the associated impact on the utility's costs of providing electrical service. For example, a utility may have a basic rate for residential service, as well as a residential rate that applies to residential consumers with electric water heaters. Reclassification of consumers, usually between the commercial and industrial sectors, may occur from year to year based on changes in demand level, economic factors, or other factors.

The revenue associated with sales to the final end user is referred to as the operating revenue. Operating revenue is collected through rates that usually consist of a number of separate parts, including energy charges, demand charges, consumer service charges, environmental surcharges, fuel and purchased power adjustments, and other miscellaneous charges. These separate rate parts, or components, allow the utility to recover the costs it incurs in providing service to each class of consumers. The elements of the cost-of-service include operating and maintenance expenses, fuel, purchased power, capital costs (e.g., depreciation, interest expenses, and return on equity), State and Federal income taxes, and taxes other than income taxes. Costs that vary with the amount of electricity produced are generally recovered through energy charges. Costs that do not vary with production, such as capital costs, are recovered through demand charges.

Average retail price is defined as the cost per unit of electricity sold and is calculated by dividing retail electric revenue by the corresponding sales of electricity. The average retail price is calculated for all consumers and for each sector (residential, commercial, and industrial). Average retail prices vary across sectors because of the different consumption patterns of residential, commercial and industrial consumers. In addition, average retail price is affected by changes in the rate schedules used by the electric utilities and by changes in the volume of electricity sales. Because fixed charges remain constant in the short run regardless of the volume of sales, with all other factors remaining constant, average retail price decreases as the volume of sales increases. Sales volumes may increase through a combination of customer growth and an increase in average consumption per customer.

Historically, the rate schedules used by electric utilities were designed so that as the volume of sales increased, to the extent the increase in revenue was less than the relative increase in sales, the average price of electricity would fall. This type of rate promoted energy consumption. As the cost of producing electricity has increased, along with concerns about the impact of electricity production on the environment, utilities are implementing rates and other programs that more closely reflect costs and reduce environmental impacts. These activities include demand response programs, green pricing, and real-time pricing.[36]

II. Early Industry History

The industry began in earnest in 1882 when Thomas Edison opened the country's first central power station - the Pearl Street Station in Manhattan – to provide electric power to 85 customers.[37] Edison was not the first to generate electricity, but he developed the distribution system that was necessary for delivering electricity to the consumer.[38]

In its early years around the turn of the 19th century the industry was local in nature, with the electric power stations that served their own distribution networks often limited in their operation to one city or town, or even distinct neighborhoods within larger municipalities. The generating capacity of these small public utilities was limited by the existing technology to no more than 10 MW. They were usually located near the end users of the electricity that they generated, mainly because of the

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[36] U.S. Energy Information, Composition of Electric Entities in the United States, 2007 at www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html#traditional.

[37] Joseph P. Tomain, "Electricity Restructuring: A Case Study in Government Regulation," 33 Tulsa L.J. 827, 830 (1998).

[38] Leonard S. Hyman et al., "America's Electric Utilities: Past, Present, and Future," 117(7th ed. 2000).

expenses involved in transmitting and distributing electricity over any appreciable distance, and particularly because of the technological limitations associated with transmitting direct current (DC) electricity at low voltage.[39] The utilities were mainly regulated by state (occasionally municipal) public service or public utility commissions. Long-range transmission had not been adequately developed, nor had the various local utilities undergone their integration into the large, centralized systems first appearing in the 1920s.[40]

In order to transmit electric power over a long distance economically and efficiently, it is necessary to both raise its voltage and reduce its current after its initial generation. But the high voltage needed for long-distance transmission cannot be used by consumers. It therefore is necessary to employ machinery and equipment at the receiving end of such a transmission to lower the voltage. Today, utilities receiving such power must maintain step-down transformers and substation facilities for that purpose. After the voltage is lowered, the electricity is subdivided and distributed over a utility's wires to consumers in its service area. With the invention of an alternating current (AC) transformer and the ability to transmit electricity greater distances at a reduced cost, the electric power industry could more readily expand.[41]

Since customers, whether for manufacturing purposes or home use, required a reliable supply of electricity it was necessary to build enough power plants so that service could be delivered without interruption. Then, as now, the electric power industry had high fixed costs and utility systems required significant financial investment in plants and equipment to meet peak load and to extend the delivery system. This was partly because of the inability to store or stockpile the commodity produced by these plants, electricity or electric power. There are relatively low operating costs, though, including costs for fuel, labor and so on, once these plants are operating. Thus, profits were deter-

[39] Jill Jonnes, "Empires of Light: Edison, Tesla, Westinghouse, and the Race to Electrify the World," 144 - 46 (2003).

[40] See Hearings, House Committee on Water Power, 65th Cong., 2d. Sess. 65.

[41] Jill Jonnes, "Empires of Light: Edison, Tesla, Westinghouse and the Race to Electrify the World," 84-85 (2003). See also U.S. Department of Energy, Energy Information Administration, "The Changing Structure of the Electric Power Industry: 1970-1991," (March 1993), available at www.tonto.eia.doe.gov/FTPROOT/electricity/0562.pdf; U.S. Department of Energy, Energy Information Administration, "The Changing Structure of the Electric Power Industry 2000: An Update," Appendix A (October 2000), available at www.eia.doe.gov/cneaf/electricity/chg_stru_update/update2000.html.

mined by the percentage of time that the power plant was in use. By charging end users more for the electricity consumed at the beginning of a use period, and then lowering the price as more electricity is consumed or used, the utility could recover the more expensive capital costs in the beginning of the consumption period before going on to recover operating costs. This rate design is such that it encourages consumption because the more an end user consumes, the cheaper the cost of the power to purchase.

The initial high capital costs of power plants still made investments in them risky.[42] Nevertheless, an increasing demand for power led to more companies entering the market, and ongoing technological improvements to generation, transmission, and distribution output and systems provided additional incentives to expand. The result was the construction of numerous power generation stations and distribution facilities with all of their requisite equipment and fixtures. But this was accomplished according to the existing industry standards, with electricity networks built by individual utility companies, each serving local load and each coordinating their own generation, transmission and distribution construction and operations. Additionally, numerous municipalities elected to create and operate their own electric utility systems. The outcome was increasing instances of infrastructure duplication, with the incompatibility between different company's systems resulting in reliability problems.[43]

A. Natural Monopolies and State Regulation

People soon realized that a few larger plants generated electric power more efficiently than numerous smaller plants. Maybe one, vertically integrated utility - given monopoly status as the only company allowed to provide generation, transmission and distribution service within a state-specified territory - could provide the service more reliably than several competing companies, so long as its rates and service standards were regulated and supervised by a state agency or commission. These features, along with a utility's organization, planning, acquisitions and other business and financial decisions, had been regulated by government agencies since the late 19th century.

The United States Supreme Court had previously accepted the notion of natural monopoly in *Munn v. Illinois*, where the Court ruled that the state of Illinois could regulate prices on grain elevators in

[42] Leonard S. Hyman et al., supra n.32 at 122.

[43] Hyman et al; See also Joseph P. Tomain, "Electricity Restructuring: A Case Study in Government Regulation," 33 Tulsa L.J. at 830.

order to protect the public interest. *Munn* stood for the proposition that there are certain industries "affected with a public interest" whose prices could be regulated for the public good. The Court relied on two factors. First, the object to be regulated, in this instance the price charged for grain storage, was deemed to be in the public interest. Second, the grain elevator operators occupied a position of natural monopoly.[44]

The Court's analysis was equally applicable to the production and sale, or generation, transmission and distribution, of electricity as well. Historically, vertically integrated electric utilities owned generation, transmission, and distribution facilities. They sold generation, transmission, and distribution services as part of a "bundled" package. Because of technological limitations on the distance over which electricity could be transmitted, each electric utility served only customers in a limited geographic area. Thus, because of their natural monopoly characteristics, electric utilities became heavily regulated by the states (eventually at both the state and federal level).

The first public service commission law was enacted in New York in 1907 and created jurisdiction over rapid transit, railroad, natural gas and electric companies. By 1920, more than two-thirds of the states had enacted electricity regulation laws and created regulatory commissions to set rates and service standards.[45] Today, each state has such a public utility or public service commission or department authorized to issue licenses, franchises or permits for the initiation of service, for construction or abandonment of facilities and related matters. In terms of rates, they generally have the power to require prior authorization of rate changes, to suspend proposed rate changes, to prescribe interim rates and to initiate rate investigations. Most commissions or departments are also authorized to control the quantity and quality of service, to prescribe uniform systems of accounts and to require annual reports.[46]

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[44] *Munn v. Illinois*, 94 U.S. 113, 126, 134 (1877).

[45] Richard F. Hirsh, "Power Loss: The Origins of Deregulation and Restructuring in the American Electric Utility System," 19-26 (1999).

[46] For example, since its establishment by the Massachusetts Legislature in 1919, the state Department of Public Utilities sets electricity rates (G.L. c. 164, secs. 93 and 94); preapproves contracts for the long-term purchase of electricity (G.L. c. 164, s. 94A); maintains oversight over utility affiliate transactions (G.L. c. 164, secs. 76A, 85, 86A, and 94B); reviews and approves distribution and transmission lines with eminent domain authority (G.L. c. 164, secs. 72, 87-91; c. 166, secs. 21-28); approves demand forecast and supply plans (G.L. c. 164, secs. 69G-69R); oversees corporate matters, including the issuance of securities (G.L. c. 164, secs. 3-33); reviews acquisitions and mergers of

In any case, electric utilities were first referred to as natural monopolies because of their business organization. A natural monopoly occurs when a company is able to expand while correspondingly reducing prices until it is the only company operating within a particular market. The following description and explanation of the cable television industry illustrates the concept:

> The cost of the cable grid appears to be the biggest cost of a cable television system and to be largely invariant to the number of subscribers the system has. We said earlier that once the grid is in place - once every major street has a cable running above or below it that can be hooked up to the individual residences along the street - the cost of adding another subscriber probably is small. If so, the average cost of cable television would be minimized by having a single company in any given geographical area; for if there is more than one company and therefore more than one grid, the cost of each grid will be spread over a smaller number of subscribers, and the average cost per subscriber, and hence price, will be higher.
>
> If the foregoing accurately describes conditions in Indianapolis ... it describes what economists call a "natural monopoly," wherein the benefits, and indeed the very possibility, of competition are limited. You can start with a competitive free-for-all- different cable television systems frantically building out their grids and signing up subscribers in an effort to bring down their average costs faster than their rivals--but eventually there will be only a single company, because until a company serves the whole market it will have an incentive to keep expanding in order to lower its average costs. In the interim there may be wasteful duplication of facilities. This duplication may lead not only to higher prices to cable television subscribers, at least in the short run, but also to higher costs to other users of the public ways, who must compete with the cable television companies for access to them. An alternative procedure is to pick the most efficient competitor at the outset, give him a monopoly, and extract from him in exchange a commitment to provide reasonable service at reasonable rates.[47]

The electric power industry shared these attributes with the cable television industry. Once one electric utility constructed a transmission line, there was no good economic reason to erect several more

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utilities (G.L. c. 164, s. 96); reviews and approves fuel costs and charges, and generating unit performance and procurement practices (G.L. c. 164, s. 94G); and ensures that electric utilities fulfill their obligations to serve (G.L. c. 164, secs. 69G-69R, 87-92, and 124-125).

[47] *Omega SatelliteProds.Co. v. Indianapolis*, 694 F.2d 119 (1982).

transmission lines for its competitors. The additional lines would be duplicative and wasteful. In order to eliminate such waste while avoiding the misuse of market power caused by monopoly electricity rates, the government and utilities entered the regulatory compact. The government allowed the utility to maintain its monopoly status, but regulated the utility while attempting to set the rates and quantity of service at what would be competitive levels. This regulatory compact benefited both the utility and the ratepayers. A monopoly on services in a particular geographic area was granted to the utility in exchange for a system of regulation that included price regulation.[48] As a general rule, utility investors were provided a level of stability in earnings and value less likely to be attained in the unregulated or moderately regulated sector; in turn, ratepayers were afforded universal, non-discriminatory service and protection from monopolistic profits through political control over an economic enterprise:

> The utility business represents a compact of sorts; a monopoly on service in a particular geographical area (coupled with state-conferred rights of eminent domain or condemnation) is granted to the utility in exchange for a regime of intensive regulation, including price regulation, quite alien to the free market.... Each party to the compact gets something in the bargain. As a general rule, utility investors are provided a level of stability in earnings and value less likely to be attained in the unregulated or moderately regulated sector; in turn, ratepayers are

[48] An industry is said to be a natural monopoly when it is more cost efficient to have one supplier build the necessary infrastructure to serve the entire market than to have multiple suppliers because each additional supplier would inevitably have to build redundant infrastructure. As this relates to electricity, any given area only needs one set of transmission wires. To build two sets would be duplicative and cost-inefficient. Joseph P. Tomain, "Electricity Restructuring: A Case Study in Government Regulation," 33 Tulsa L.J. 827, 831 (1998). See also Shubha Ghosh, "Decoding and Recoding Natural Monopoly, Deregulation, and Intellectual Property," 2008 U. Ill. L. Rev. 1125, 1138–39. A natural monopoly arises when the average costs of producing a product or service declines as more of the product or service is supplied to the market. Because of declining average costs, it is more efficient from the perspective of lowering the average cost of production to have one firm serve the market rather than duplicate expenditures. Average costs are falling either because there are huge fixed costs to production or because the costs of producing an additional unit of the product or service are negligible.

afforded universal, non-discriminatory service and protection from monopolistic profits through political control over an economic enterprise.[49]

In exchange for a government-protected monopoly, the electric company allowed the government to set its rates. The company was granted a franchise or service area, and was the only company authorized to sell electricity in that area. The company actually assumed a legal obligation to provide electric power within this area. Through the ratemaking process, the government set the rates for such service. Generally, the electric company was compensated for its operating expenses and commitments that were prudently incurred pursuant to its legal obligation to provide reliable electric service at reasonable costs. In other words, the government allowed the utility to earn a reasonable rate of return on its capital investment to enable it to earn a profit.[50] Hence, the regulatory control of public electric utility companies as natural monopolies took place by limiting competition, setting prices, controlling profits and, imposing a service obligation.[51]

Accordingly, electric companies began to concentrate to take advantage of economies of scale.[52] Over 1600 privately-owned electric utilities were eliminated as the industry's companies began to consolidate and become vertically integrated. Ultimately, by 1930, 90 percent of all operating companies were controlled by 19 holding companies. Most of the changes in ownership among these utilities involved holding companies gaining control over previously independent operating units. Unfortunately, their owners exerted control over these companies through "interlocking directorates," where the same individuals would serve on the board of directors of more than one of the

[49] *Jersey Central Power & Light Company v. F.E.R.C.*, 810 F.2d 1168 (1987). See generally Posner, "Natural Monopoly and Its Regulation," 21 Stan.L.Rev. 548 (1969); Demsetz, "Why Regulate Utilities?," 11 J. Law & Econ. 55 (1969).

[50] *FPC v. Hope Natural Gas Co.,* 320 U.S. 591 (1944). *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 309 (1989).

[51] Joseph P. Tomain, "Electricity Restructuring: A Case Study in Government Regulation," 33 Tulsa L.J. 827, 831 (1998).

[52] See Company Act of 1935, 12 Lewis & Clark L. Rev. 903, 913 (2008) ("In 1926 alone, there were more than 1000 mergers, most of which involved sales of public utilities to private companies . . . controlled by large holding companies.").

holding companies, thus allowing for concerted action.[53] Studies documented a pattern of wide-spread abuses by holding company systems, promoters and underwriters.[54] Use of the holding company structure allowed for the inflating of asset values through a process called "pyramiding," a type of shareholder exploitation.[55]

Pyramiding resulted in the widespread use of bonds and preferred non-voting stock, both of which paid fixed returns, as a means of financing the acquisition of public utility operating companies and other holding companies. This growth in debt and the payments required to service the debt made the holding companies more vulnerable to the economy. It was also believed that these holding companies abused the system by using doubtful intercompany transfers and charging excessive service fees to their own subsidiary companies. These fees (e.g., construction charges) increased the book value of the holding company which then inflated the subsidiary operating utility's book value, causing the rates charged to their customers to increase. The result was unrealistic prices for the holding company securities. Among other things, inadequate disclosure made it difficult for investors to appraise the financial position or earning power of the issuer. Furthermore, excessive debt and abusive affiliate transactions tended to prevent voluntary rate reductions at the operating company level.[56] The fact that these holding companies wished to continue acquiring operating utilities and other holding companies led them to purchase these entities at prices well above their fair market value. Ultimately, this level of concentration and control, along with the collapse of the utility holding companies and the poor performance of their operating subsidiary companies during the Great Depression led to federal oversight and industry regulation.[57]

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[53] William E. Mosher and Finla G. Crawford, "Public Utility Regulation," New York: Harper and Brothers, 1933, p. 327, 330-331.

[54] Division of Investment Management, Securities and Exchange Commission, "The Regulation of Public-Utility Holding Companies," June 1995.

[55] See U.S. Securities and Exchange Commission, "Statement Concerning Proposals to Amend or Repeal the Public Utility Holding Company Act of 1935," June 2, 1982, pp. 6 - 12.

[56] "The Regulation of Public-Utility Holding Companies" at 5, June 1995.

[57] Energy Information Administration, "Public Utility Holding Company Act of 1935: 1935 – 1992," January, 1993.

III. Federal Regulation and the Public Utility Act of 1935

To a certain extent, it was the lack of effective government supervision that allowed the utility holding companies to expand in that manner described above. Before 1935, the regulation of electric utilities had been left almost exclusively to the states since the utilities were primarily local in nature.[58] The only federal regulation of utilities at that time was the Federal Power Act of 1920, which gave the Federal Power Commission jurisdiction over the licensing of hydroelectric power projects along the navigable waters of the United States, but little else.[59] As efficiency in electricity generation increased, the service territories of the electric utilities began to expand. Since the holding companies controlled the utility companies and the holding companies were engaged in interstate commerce, federal preemption made it difficult, if not impossible, for state public utility commissions to effectively regulate the operating utilities. The United States Supreme Court had ruled that transmitting gas or electricity from one state to another state involved interstate commerce and that a state could not burden such commerce by direct regulation.[60] States and municipalities retained the authority to regulate retail rates within state boundaries. But since they had no jurisdiction over the costs of

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[58] As discussed, supra. Regulation by states through public services commissions had been particularly important in the area of electric power, since the states originally granted exclusive franchises to the utilities within their borders and regulated electric service from the generator through transmission and distribution to the local customer.

[59] Michael C. Blumm, "Northwest Hydro--Electric Heritage: Prologue to the Pacific Northwest Electric Power Planning," Washington Law Review, April 1983, p. 190. The jurisdictional lines between local and national authority were not finally determined until the Court's *Attleboro* decision which followed the Federal Water Power Act by some seven years. See infra.

[60] *Public Utilities Commission of Rhode Island v. Attleboro Steam & Electric Company*, 273 U.S. 83 (1927); *Pennsylvania Gas Company v. Public Service Commission*, 252 U.S. 23 (1920); *Public Utilities Commission v. Landon,* 249 U.S. 236 (1919). See S.Rep.No. 621, 74th Cong., 1st Sess., pp. 17-54 (1935); H.R.Rep.No. 1318, 74th Cong., 1st Sess., pp. 7-8 (1935). The hearings before both the House and Senate Committees reflect the general consensus that under Attleboro and the earlier decisions, the Commerce Clause denied the States power over any wholesale transaction in interstate commerce. Hearings before the House Committee on Interstate and Foreign Commerce on H.R. 5423, 74th Cong., 1st Sess., pp. 96, 384, 402, 421-422, 435, 497-498, 518, 521-523, 1612, 1614, 1622-1623, 1629, 1639, 1642, 1656-1657, 1679, 2143, 2144, 2156 (1935); Hearings before the Senate Committee on Interstate Commerce on S. 1725, 74th Cong., 1st Sess., pp. 250-251, 760, 767, 768, 800-801 (1935).

transmitting interstate power or gas, the state public utility commissions and municipal governments lacked the information necessary for effective regulation.

So it was "more than historical accident that caused the simultaneous passage of the Public Utility Holding Company Act and the Federal Power Act" within the Public Utility Act of 1935. "Their mutual consideration by the 79th Congress indicates Congress' realization that state regulation had failed, both because of the excessive growth of the holding company and because of inability to reach interstate sales."[61] The Public Utility Act of 1935 had two primary and related purposes: to curb abusive practices of public utility companies by bringing them under effective control, and to provide effective federal regulation of the expanding business of transmitting and selling electric power in interstate commerce.[62] The Act was passed in the context of, and in response to, the great concentrations of economic power vested in public utility holding companies, and the absence of antitrust enforcement to restrain the growth and practices of these companies.[63]

A. The Public Utility Holding Company Act

Title I of the Public Utility Act, the Public Utility Holding Company Act of 1935 (PUHCA), regulated the financial practices of the interstate holding companies that controlled a large number of electric utilities. PUHCA defined public utility holding companies as companies exercising a controlling interest in another company which either directly or indirectly controls an operating public utility.[64]

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[61] See *United States v. Public Utilities Commission of California Mineral County Nevada*, 345 U.S. 295, note 7, (1953), citing Davis, "Influence of Federal Trade Commission's Investigations," 14 Geo.Wash.L.Rev. 21(internal citations omitted).

[62] 49 Stat. 803-804, 847-848; S. Rep. No. 621, 74th Cong., 1st Sess., 1-4, 17-20; H. R. Rep. No. 1318, 74th Cong., 1st Sess., 3, 7-8; *Jersey Central Co. v. FPC*, 319 U.S. 61, 67 -68 (1943); see *North American Co. v. SEC*, 327 U.S. 686 (1946).

[63] See S. Rep. No. 621, supra, at 11-12; Utility Corporations - Summary Report, 70th Cong., 1st Sess., S. Doc. No. 92, Part 73-A, pp. 47-54; 79 Cong. Rec. 8392 (1935).

[64] Any company which directly or indirectly owns, controls, or holds with power to vote, 10 percent or more of the outstanding voting securities of a public utility holding company or of a company which is a holding company by virtue of this clause ... unless the [Securities and Exchange] Commission declares such a company not to be a holding company .... [Any] person which the Commission determines, after notice of an opportunity for hearing, directly or in directly to exercise (either alone

PUHCA required holding companies to register with the U.S. Securities and Exchange Commission (SEC), satisfy certain disclosure requirements, and comply with strict operational limitations. The electric utilities had to be operated on a vertically integrated basis, usually within a single state or contiguous states, and the SEC was granted authority to order divestiture where operations of electric utility and non-utility operations created the potential for financial abuse.[65]

These provisions effectively limited ownership of public utilities to a small subset of companies focused specifically on the industry and succeeded in reorganizing the electric utility industry in the United States into state-bounded companies with local management whose activities could be regulated by that State's public utility commission.[66] By 1947, virtually all holding companies had undergone some type of simplification or integration and, by 1950, the utility re organizations were virtually complete.[67]

PUHCA was repealed and replaced in the Energy Policy Act of 2005. Pursuant to the repeal, the Securities and Exchange Commission no longer has oversight authority for electric and gas holding

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or pursuant to an arrangement or understanding with one or more other persons) such a controlling influence over the management or policies of any public utility or holding company as to make it necessary or appropriate in the public interest or for the protection of investors or consumers that such person be subject to the obligations, duties, and liabilities imposed in this title upon holding companies. Public Utility Act of 1935, Public Law No. 333, Sec. 2 (a)(7)(1935).

[65] See "The Regulation of Public-Utility Holding Companies" at 5, June 1995. Under PUHCA, a registered public-utility holding company was generally limited to a single, integrated public- utility system and to those nonutility businesses that are "reasonably incidental, or economically necessary or appropriate" to the system's utility operations. SEC approval was required before such companies could issue or sell securities, or alter the rights of security holders; acquire any securities or utility assets or any interest in a nonutility business, or sell utility assets or securities. PUHCA also restricted intra-system loans and extensions of credit, as well as affiliate service, sales and construction contracts. Also, registered holding companies were subject to extensive reporting and accounting requirements.

[66] Douglas W. Hawes, "Utility Holding Companies," s. 2.03, 3.02-03 (1987). See also Richard D. Cudahy, "70th Anniversary Celebration of the Federal Power Act," 26 ENERGY L.J. 389 (2005).

[67] Keith M. Howe, "Public Utility Economics and Finance," Englewood Cliffs, NJ: Prentice Hall, 1982, p. 262.

companies, and many of the procedural and substantive requirements placed upon public utility holding companies by PUHCA have been repealed.[68]

The burden of oversight of the financial transactions of public utility companies, including mergers and acquisitions, now falls more heavily on FERC, whose oversight authority over public utilities, previously established in the Federal Power Act, was enhanced by the Energy Policy Act of 2005 which included the Public Utility Holding Company Act of 2005. This new legislation requires holding companies and their affiliates to provide FERC, as well as state regulators, access to their books and records and also grants FERC the additional authority for oversight of holding company transactions.

B. The Federal Power Act

The Federal Power Act was enacted as Title II of the Public Utility Act of 1935. (Part II of Tit. II was denominated the Federal Power Act.)[69] The Water Power Act became Part I of the Federal Power Act when Part II was enacted.[70] Aside from the Water Power Act, there was no existing statutory basis for the federal regulation of electric power until the enactment of Part II of the Federal

[68] FERC jointly administered PUHCA with the Securities and Exchange Commission. The Energy Policy Act of 2005 largely repealed PUHCA. See 42 U.S.C. ss. 16451 - 16463 (2006); see also Repeal of the Public Utility Holding Company Act of 1935 and Enactment of the Public Utility Holding Company Act of 2005, 70 Fed. Reg. 75,592, 75,592–93 (Dec. 20, 2005) (to be codified at 18 C.F.R. pts. 365 & 366); Markian M.W. Melnyk & William S. Lamb, "PUHCA's Gone: What Is Next for Holding Companies?," 27 Energy L.J. 1 (2006) (examining the conditions that gave rise to PUHCA and the changes that resulted in its repeal and examining FERC's role in regulating the industry).

[69] 49 Stat. 863.

[70] As discussed previously, the Water Power Act provided that the rates and services in connection with sales of energy generated at hydroelectric projects licensed under that Act were to be regulated by the Federal Power Commission whenever "any of the States directly concerned has not provided a commission or other authority to enforce the requirements of this section within such State . . . or such States are unable to agree through their properly constituted authorities on the services . . . or on the rates. . . ."

Power Act in 1935.[71] The Federal Power Act was enacted in part to regulate interstate sales at wholesale of electric power, closing what had come to be known as the Attleboro Gap in the regulation of electricity. The United States Supreme Court's decision in the *Attleboro*[72]case meant that states were precluded from regulating these wholesale sales of electricity and were limited to regulating retail sales. Part II of the Federal Power Act gave the then named the Federal Power Commission the authority to regulate interstate transmission and wholesale sales of electricity.

Maintaining the proper balance between federal and state authority in the regulation of electric and other energy utilities has long been a serious challenge to both judicial and congressional wisdom. On the one hand, the regulation of utilities is one of the most important of the functions traditionally associated with the police power of the States.[73] On the other hand, the production and transmission of electricity is an activity particularly likely to affect more than one State, and its effect on interstate commerce is often significant enough that uncontrolled regulation by the States can demonstrably interfere with broader national interests.[74]

This was the dilemma faced by the United States Supreme Court early in the 20th century in a series of cases construing the restrictions imposed by the Commerce Clause on state regulation on the sale of natural gas. The Court's solution was to fashion a bright line dividing permissible from impermissible state regulation.[75] Through these cases, the Court made it clear that retail sales of gas were subject to state regulation, even when the gas was transported interstate and distributed directly from

[71] The first significant federal rate regulation statute was the Interstate Commerce Act of 1887, which primarily addressed railroad rates but generally governed all interstate rates. It was the model for subsequent federal public utility statutes like the Federal Power Act of 1920, the Communications Act of 1934, the Natural Gas Act of 1938, and the Civil Aeronautics Act of 1938. See *Verizon Communications Inc. v. FCC,* 535 U.S. 467, n. 3 (2002).

[72] *Public Utilities Commission of Rhode Island v. Attleboro Steam & Electric Company*, 273 U.S. 83 (1927).

[73] See *Munn v. Illinois*, 94 U.S. 113 (1877).

[74] See *FERC v. Mississippi*, 456 U.S. 742, 755 -757 (1982); *New England Power Co. v. New Hampshire*, 455 U.S. 331, 339 (1982).

[75] See *Missouri v. Kansas Gas Co.*, 265 U.S. 298, 309 (1924); *Public Utilities Comm'n for Kan. v. Landon*, 249 U.S. 236 (1919); cf. *Pennsylvania Gas Co. v. Public Service Comm'n of N. Y.*, 252 U.S. 23 (1920).

interstate gas mains, and whether the local distribution occurs with the interstate transporting company or some independent distributing companies.[76] However, the wholesale sale of gas in interstate commerce was not subject to state regulation even though some of the gas was produced locally. The Court reasoned that that "[t]ransportation of gas from one State to another is interstate commerce; and the sale and delivery of it to the local distributing companies is a part of such commerce,"[77] but that "[w]ith the delivery of the gas to the distributing companies . . . the interstate movement ends" and the further "effect on interstate commerce, if there be any, is indirect and incidental."[78]

The wholesale/retail line drawn in the *Landon* and *Kansas Gas* cases was applied to electric utilities in *Public Utilities Comm'n of R. I. v. Attleboro Steam & Electric Co.* (*Attleboro*).[79] *Attleboro* involved an attempt by the Rhode Island Public Utilities Commission to regulate the rates at which the Narragansett Electric Lighting Co. - a Rhode Island utility - could sell electric current to a Massachusetts distributor. The Court struck down the regulation, holding that, because it involved a transaction at wholesale, it imposed a "direct" rather than an "indirect" burden on interstate commerce. In doing so the Court determined that it was immaterial "that the general business of the Narragansett Company appears to be chiefly local,"[80] or that the State Commission grounded its assertion of jurisdiction on the need to facilitate the regulation of the company's retail sales to its Rhode Island customers.

As a direct result of *Attleboro* and its predecessor cases, Congress undertook to establish federal regulation over most of the wholesale transactions of electric utilities engaged in interstate commerce, and created the Federal Power Commission (now FERC) to carry out that task.[81] Although the main

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[76] *Missouri v. Kansas Gas Co.*, supra, at 309.

[77] 265 U.S. at 307.

[78] Id., at 308. See also, e. g., *State Corporation Comm'n v. Wichita Gas Co.*, 290 U.S. 561, 563 -564 (1934); *East Ohio Gas Co. v. Tax Comm'n of Ohio,* 283 U.S. 465, 470 - 471 (1931).

[79] 273 U.S. 83 (1927).
[80] Id., at 90.

[81] See Federal Power Act of 1935 (Title II of the Public Utility Act of 1935), 49 Stat. 838-863; Natural Gas Act of 1938, 52 Stat. 821.

purpose of this legislation was to "`fill the gap'" created by *Attleboro* and its predecessors,[82] it nevertheless shifted the Court's main focus - in determining the permissible scope of state regulation of utilities - from the constitutional issues that concerned them in *Attleboro* to analyses of legislative intent. For example, in I*llinois Gas Co. v. Public Service Co.*,[83] the Court was required to determine whether the sale of natural gas by an Illinois pipeline corporation to local distributors in Illinois was subject to the jurisdiction of the Federal Power Commission or the Illinois Commerce Commission. The Court began its analysis by describing the wholesale/retail test drawn in *Landon, Kansas Gas, Attleboro*, and other cases. It then noted another line of cases - relating to both utility regulation and other Commerce Clause issues - in which the Court was "less concerned to find a point in time and space where the interstate commerce . . . ends and intrastate commerce begins, and . . . looked [instead] to the nature of the state regulation involved, the objective of the state, and the effect of the regulation upon the national interest in the commerce."[84] The Court acknowledged:

> In the absence of any controlling act of Congress, we should now be faced with the question whether the interest of the state in the present regulation of the sale and distribution of gas transported into the state, balanced against the effect of such control on the commerce in its national aspect, is a more reliable touchstone for ascertaining state power than the mechanical distinctions on which appellee relies.[85]

The Court ultimately concluded, though, that it was "under no necessity of making that choice here," for Congress, partly to avoid "drawing the precise line between state and federal power by the litigation of particular cases,"[86] had adopted the "mechanical" line established in *Kansas Gas* and *Attleboro* as the statutory line dividing federal and state jurisdiction.

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[82] See *New England Power Co. v. New Hampshire,* supra, at 340; *United States v. Public Utilities Comm'n of California*, 345 U.S. 295, 311 (1953).

[83] 314 U.S. 498 (1942).

[84] 314 U.S., at 505.

[85] Id., at 506.

[86] Id., at 507.

The analysis in *Illinois Gas* was reaffirmed in subsequent cases and extended to similar jurisdictional disputes arising under the Federal Power Act.[87] The last of these cases held that under the *Attleboro* test, a California utility that received some of its power from out-of-state was subject to federal and not state regulation in its sales of electricity to a California municipality that resold the bulk of the power to others.[88]

When it enacted the Federal Power Act (or FPA) in 1935, Congress authorized federal regulation of electricity in areas beyond the reach of state power, such as the gap identified in Attleboro, but it also extended federal coverage to some areas that previously had been state regulated. Prior to the FPA's enactment, state regulations affecting an interstate electric utility's transactions were allowable if they did not directly burden interstate commerce. The FPA charged the Federal Power Commission (FPC) "to provide effective federal regulation of the expanding business of transmitting and selling electric power in interstate commerce."[89] Specifically, in Section 201(b) of the FPA, Congress recognized the FPC's jurisdiction as including "the transmission of electric energy in interstate commerce" and "the sale of electric energy at wholesale in interstate commerce."[90] Furthermore, Section 205 of the FPA prohibited, among other things, unreasonable rates and undue discrimination "with respect to any transmission or sale subject to the jurisdiction of the Commission," and Section 206 gave the FPC the power to correct such unlawful practices.[91]

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[87] See, e. g., *Panhandle Eastern Pipe Line Co. v. Public Service Comm'n of Ind.*, 332 U.S. 507, 517 (1947) ("The line of the statute was . . . clear and complete. It cut sharply and cleanly between sales for resale and direct sales for consumptive uses"); *United States v. Public Utilities Comm'n of California*, supra, at 308 ("Congress interpreted [Attleboro] as prohibiting state control of wholesale rates in interstate commerce for resale, and so armed the Federal Power Commission with precisely that power") (footnote omitted); *FPC v. Southern California Edison Co.*, 376 U.S. 205 (1964).

[88] See also *FPC v. Florida Power & Light Co.*, 404 U.S. 453 (1972).

[89] *Gulf States Util. Co. v. FPC*, 411 U.S. 747, 758 (1973).

[90] 16 U.S.C. s. 824(b).

[91] 16 U.S.C. s. 824d(a) - (b); 16 U.S.C. s. 824d(a). Section 201(a) states in full: "It is declared that the business of transmitting and selling electric energy for ultimate distribution to the public is affected with a public interest, and that Federal regulation of matters relating to generation to the extent provided in this subchapter and subchapter III of this chapter and of that part of such business which consists of the transmission of electric energy in interstate commerce and the sale of such energy at

Part II of the Federal Power Act confers on FERC (alternatively referred to as the Commission) jurisdiction over rates, terms, and conditions of electric transmission service provided by public utilities in interstate commerce.[92] Section 201(b)(1) of the FPA authorizes FERC to exercise jurisdiction over "the transmission of electric energy in interstate commerce," "the sale of electric energy at wholesale in interstate commerce," and "all facilities for such transmission or sale of electric energy."[93] Jurisdiction over "facilities used in local distribution or only for the transmission of electric energy in intrastate commerce"[94] is left to the States. Section 201(c) further provides that electric en-

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wholesale in interstate commerce is necessary in the public interest, such Federal regulation, however, to extend only to those matters which are not subject to regulation by the States."

[92] 16 U.S.C. ss. 824-824m.

[93] 16 U.S.C. s. 824d(b)(1). Section 201(b)(1) states in full: "The provisions of this subchapter shall apply to the transmission of electric energy in interstate commerce and to the sale of electric energy at wholesale in interstate commerce, but except as provided in paragraph (2) shall not apply to any other sale of electric energy or deprive a State or State commission of its lawful authority now exercised over the exportation of hydroelectric energy which is transmitted across a State line. The Commission shall have jurisdiction over all facilities for such transmission or sale of electric energy, but shall not have jurisdiction, except as specifically provided in this subchapter and subchapter III of this chapter, over facilities used for the generation of electric energy or over facilities used in local distribution or only for the transmission of electric energy in intrastate commerce, or over facilities for the transmission of electric energy consumed wholly by the transmitter."

[94] See *Connecticut Light Power Co. v. Federal Power Commission*, 324 U.S. 515, 529-531 (1945):

> This bill came before Congress as prepared by the staff of the Commission, couched largely in the technical language of the electric art. Federal jurisdiction was to follow the flow of electric energy, an engineering and scientific, rather than a legalistic or governmental, test. Technology of the business is such that, if any part of a supply of electric energy comes from outside of a state, it is or may be present in every connected distribution facility. Every facility, from generator to the appliance for consumption, may thus be called one for transmitting such interstate power. By this test, the cord from a light plug to a toaster on the breakfast table is a facility for transmission of interstate energy if any part of the load is generated without the state. It has never been questioned that, technologically, generation, transmission, distribution, and consumption are so fused and interdependent that the whole enterprise is within the reach of

ergy is transmitted in interstate commerce if it is "transmitted from a State and consumed at any point outside thereof."[95] Section 201(d) states that the "term 'sale of electric energy at wholesale'

> the commerce power of Congress, either on the basis that it is, or that it affects, interstate commerce if at any point it crosses a state line. Such a broad and undivided base for jurisdiction of the Power Commission would be quite unobjectionable, and perhaps highly salutary if the United States were a unitary government and the only conflicting interests to be considered were those of the regulated company.
>
> But state lines and boundaries cut across and subdivide what, scientifically or economically viewed, may be a single enterprise. Congress is acutely aware of the existence and vitality of these state governments. It sometimes is moved to respect state rights and local institutions even when some degree of efficiency of a federal plan is thereby sacrificed. Congress may think it expedient to avoid clashes between state and federal officials in administering an act such as we have here. Conflicts which lead state officials to stand shoulder to shoulder with private corporations making common cause of resistance to federal authority may be thought to be prejudicial to the ends sought by an act and regulation more likely to be successful, even though more limited, if it has local support. Congress may think complete centralization of control of the electric industry likely to overtax administrative capacity of a federal commission. It may, too, think it wise to keep the hand of state regulatory bodies in this business, for the "insulated chambers of the states" are still laboratories where many lessons in regulation may be learned by trial and error on a small scale without involving a whole national industry in every experiment.
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> But, whatever reason or combination of reasons led Congress to put the provision in the Act, we think it meant what it said by the words "but shall not have jurisdiction, except as specifically provided in this Part or the Part next following . . . over facilities used in local distribution. Congress, by these terms, plainly was trying to reconcile the claims of federal and of local authorities and to apportion federal and state jurisdiction over the industry.

[95] 16 U.S.C. s. 824d(c). Section 201(c) explains that "[f]or the purpose of this subchapter, electric energy shall be held to be transmitted in interstate commerce if transmitted from a State and consumed at any point outside thereof; but only insofar as such transmission takes place within the United States."

when used in this subchapter, means a sale of electric energy to any person for resale."[96] Section 201(e) defines "public utility" as "any person who owns or operates facilities subject to the jurisdiction of [FERC]."[97] Finally, section 201(f) excludes from FERC's jurisdiction companies owned by "the United States, a State or any political subdivision of a State," except as specifically provided.[98]

IV. Rate Setting

Congress passed the Federal Power Act to establish the statutory framework described above. This framework emerged from a wider body of state and federal regulation that revolved around the by-then "familiar mandate" that rates in various industries be "just and reasonable."[99] Before Congress had passed many laws regulating national industries, state legislatures created specialized agencies "to set and regulate rates."[100] In the electric power industry, this effort began in the first decade of the twentieth century. By 1914, thirty-three states had enacted electricity regulation laws.[101]

The national government's first substantial venture into rate regulation occurred in 1887 with the passage of the Interstate Commerce Act.[102] This statute, primarily concerned with interstate railroad rates, formed "the model for subsequent federal public utility statutes like the Federal Power Act."[103]

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96 16 U.S.C. s. 824d(d). Section 201(d) provides that "[t]he term 'sale of electric energy at wholesale,' when used in this Part, means a sale of electric energy to any person for resale."

97 16 U.S.C. s. 824d(e). Section 201(e) provides that "[t]he term 'public utility,' when used in this Part or in the Part next following, means any person who owns or operates facilities subject to the jurisdiction of the Commission under this Part."

98 16 U.S.C. 824d(f).

99 *Verizon Commc'ns Inc. v. FCC*, 535 U.S. 467, 477 (2002).

100 Id.

101 Richard F. Hirsh, "Power Loss: The Origins of Deregulation and Restructuring in the American Electric Utility System," 19-26 (1999).

102 Ch. 104, 24 Stat. 379 (1887).

103 *Verizon,* 535 U.S. at 478, n. 3.

Under the Interstate Commerce Act, railroad carriers would first propose rate schedules, termed "tariffs." Then, interested parties could comment to the agency, which would accept the tariff so long as it was "just and reasonable."[104]

Both the states and Congress applied this structure to the electric power industry on the basis of several widespread assumptions. As previously discussed, legislatures assumed that electric power companies were "natural monopolies" because of the inefficiencies associated with competitors constructing duplicative infrastructure (parallel power lines) and the corresponding benefits and efficiencies gained from operational economies of scale, making a monopoly more efficient than a competitive market.[105] Additionally, because of electricity's distinctive characteristics (it cannot be stored and needs to be produced at virtually the same instant that its end-users require it) power shortages anywhere over an interconnected electricity grid could jeopardize the entire system. These factors, unique to the electric power industry, made it particularly susceptible to an abuse of market power.[106] Theoretically, a local electric utility could withhold power, demand higher rates, and potentially disrupt a regional market. Thus, regulation would help to keep electric utilities in check.[107]

So then, with the inception of electric utility regulation in the United States, and with the "public interest" of offsetting monopoly power and guaranteeing affordable, reliable public access to electrical service, legislatures enacted rate schedules to fix the prices electric companies, as public utilities, could charge for such service.[108] Since this process was extremely complicated, specialized adminis-

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[104] Id. at 478.

[105] Timothy P. Duane, Regulation's Rationale: Learning from the California Energy Crisis, 19 Yale J. On Reg. 471, 476-77 (2002).

[106] See Hirsh, supra.

[107] Duane, supra, at 477-78.

[108] See note 38, supra, and *Munn v. Illinois* as discussed. *Verizon Communications Inc. v. FCC*, 535 U.S. 467, 477 (2002) (internal citations omitted). Most states have administrative bodies that regulate electric public utility companies. As these utilities normally are given monopoly jurisdiction, they are extensively regulated, both substantively and procedurally, by state law.

trative agencies were legislatively established to set and regulate rates.[109] The common mandate found in their enabling Acts was to ensure that rates were "just and reasonable" and not discriminatory.[110] The "just and reasonable" rate was designed towards navigating the straits between gouging utility customers and confiscating utility property.[111] But since no legislative body defined those terms, it was left to the regulators to sort out their meaning through trial-like administrative hearings.[112]

As part of the so called regulatory "compact" the electric companies, as public utilities, were under a state statutory duty to serve the public.[113] But while their assets were employed in the public interest to provide consumers with electricity, they were privately owned and operated, and private business-

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[109] The Massachusetts legislature established the state Department of Public Utilities to ensure that regulated public utility companies provided safe, reliable, and least-cost service to Massachusetts consumers. See note 38, supra.

[110] *Verizon Communications Inc.* at 477.

[111] *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). See also Barnes at 289 - 290; Bonbright at 38.

[112] The just and reasonable statutory standard is imprecise. "The words themselves have no intrinsic meaning applicable alike to all situations." *City of Chicago v. FPC*, 458 F.2d 731, 750 (D.C.Cir.1971) (quoting *City of Detroit v. FPC*, 230 F.2d 810, 815 (D.C.Cir.1955)), cert. denied, 405 U.S. 1074 (1972). Congress itself has provided no formula for determining an unjust and unreasonable rate. *Hope*, 320 U.S. at 600. Cases subsequent to *Hope* have loosely defined this "deliberately broad" standard as drawing a "zone of reasonableness in which rates may properly fall. It is bounded at one end by the investor interest against confiscation and at the other by the consumer interest against exorbitant rates." See, e.g., *Washington Gas Light*, 188 F.2d at 15. Thus, the only way that a rate may fall outside the zone of reasonableness, from the utility's point of view, is if it is so low that it amounts to a unconstitutional taking under the fifth amendment. See *FPC v. Natural Gas Pipeline Co.*, 315 U.S. 575, 586 (1942).

[113] For example, Mass. Gen. Laws Ch. 164, Section 1B (a) provides that each distribution company "shall have the exclusive obligation to provide distribution service to all retail customers within its service territory ...."

es must borrow money or find investors to function.[114] Basically, private companies must attract capital. Because of the constitutional concerns regarding taking property without adequate compensation, the government had to guarantee private companies the right to earn a fair return on their property, or stated another way, guarantee companies that fair revenue was available through the government set rates.[115] Otherwise, companies would be unable to borrow money or attract investors. Thus, regulators had to balance competing demands. First, the private company had to be given the opportunity to earn a profit. Second, the utility could not be allowed to overcharge its customers through monopolistic rates. Rates could not be set so low that it was not worth it economically for companies to stay in the electric power business, but neither could they be set so high the customers were disadvantaged. As a result, regulators attempted to set rates that kept the elec-

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[114] Because, for example, accounts receivable may not be collected until after liabilities come due, working capital is capital needed to pay current liabilities in the interim. Z. Bodie & R. Merton, "Finance," 427 (prelim. ed. 1998). 'Working capital', in the context of public utility rate regulation, has been defined as the 'allowance for the sum which the Company needs to supply from its own funds for the purpose of enabling it to meet its current obligations as they arise and to operate economically and efficiently'. Barnes, "The Economics of Public Utility Regulation," (1942) 495. Since it is normally contemplated that all operating expenses will eventually be paid for out of revenues received by the Company, the need for working capital arises largely from the time lag between payment by the Company of its expenses and receipt by the Company of payments for service in respect of which the expenses were incurred. See *City of Pittsburgh v. Pennsylvania Public Utilities Comm.*, 370 Pa. 305, 309-312, (1952).

[115] If the rate does not afford sufficient compensation, the State has taken the use of utility property without paying just compensation and so violated the Fifth and Fourteenth Amendments. As has been observed, however, "[h]ow such compensation may be ascertained, and what are the necessary elements in such an inquiry, will always be an embarrassing question." *Smyth v. Ames*, 169 U.S. 466, 546, (1898). The guiding principle has been that the Constitution protects utilities from being limited to a charge for their property serving the public which is so "unjust" as to be confiscatory. *Covington & Lexington Turnpike Road Co. v. Sandford*, 164 U.S. 578, 597 (1896) (A rate is too low if it is "so unjust as to destroy the value of [the] property for all the purposes for which it was acquired," and in so doing "practically deprive[s] the owner of property without due process of law"); *FPC v. Natural Gas Pipeline Co.*, 315 U.S. 575, 585 (1942) ("By long standing usage in the field of rate regulation, the 'lowest reasonable rate' is one which is not confiscatory in the constitutional sense"); *FPC v. Texaco Inc.*, 417 U.S. 380, 391-392 (1974) ("All that is protected against, in a constitutional sense, is that the rates fixed by the Commission be higher than a confiscatory level").

tric utility companies competitive. This required regulators to structure rates, in addition to covering operating costs and expenses, to allow an electric utility to expand its operating plant and production. The capital-attraction function is another way of saying that rates should be set to allow these companies to obtain investment capital to finance growth. Companies were allowed to charge "reasonable rates," meaning rates that allowed them to encourage investment in their stocks and bonds at the same rate of return available to them in comparable non-utility regulated industries.[116]

An electric utility could not change its rates without first providing notice to its customers, who could request a regulatory review if proposed rate increases were believed to be unjust or unreasonable. Thus, rates were sometimes determined after a rate case hearing, a formal adjudicatory or trial-type hearing presided over by an administrative law judge. Since an electric utility's rates were based on the utility's costs, rate cases primarily focused on a detailed examination of the historic or projected utility costs, or both. Rate cases could also be scheduled based on the actions of the regulator or the electric utility, although some states required the regular review of an electric utility's rates after defined number of years, thus resulting in regularly scheduled rate cases. Electric utilities usually requested a hearing only when they anticipated lower-than-expected revenues or rates of return, or when they had a significant change in capital investment, such as the addition of a new generating plant.

A. Rate Formula

The rate formula ultimately determined by the regulators was designed for the utility to recover the costs that it accrued in providing service to its customers – usually residential, small and large commercial and industrial customers. A utility's costs consist primarily of operating expenses and capital investments.

Operating expenses, such as wages, salaries, generating-plant fuel costs, purchased power and transmission services, additional supplies, maintenance, taxes, and research and development, must

[116] A return is fair and reasonable if it covers utility operating expenses, debt service, and dividends, if it compensates investors for the risks of investment, and if it is sufficient to attract capital and assure confidence in the enterprise's financial integrity. Confiscation occurs when the Department's ratemaking decision deprives a utility of the opportunity to realize a fair and reasonable return on its investment. *Boston Edison v. Department of Public Utilities*, 375 Mass. 1, cert. denied, 439 U.S. 921 (1978).

be recovered for the utility to remain in business. Regulators must determine which items should be allowed as expenses and the value of those items.

Capital investments consist of the value of the electric utility's tangible and intangible property minus that property's accrued depreciation, also referred to as its "rate base." Examples include the generating plant, transmission and distribution system, and other infrastructure such as office buildings. The utility raises the funds for these investments by borrowing from lenders and issuing stock to investors. Regulators allow the utility to earn a rate of return on this rate base, setting it in a range that allows the utility to earn a profit on its investment and attract capital at favorable rates. The rate of return is not itself a "rate" in the statutory sense (e.g., dollars per kilowatt hour) but is used to determine the actual rate that the end user is charged. The rate of return is the percentage return on investment in the rate base and reflects interest on debt and dividends from stock adjusted for growth. The final percentage is the weighted average of debt and equity and is intended to reflect the return necessary to attract investment from each class of investor.[117]

The combination of debt service and operating expenses is the amount needed by the utility to operate effectively, its revenue requirement.[118] Revenues from rates needed to equal that amount. This, plus the allowed rate of return, set the "rate level." The process of ratemaking involved translating the rate level into specific rates for each customer, a process called rate design. The rate-making ideal was for the cost of service to be perfectly allocated to each customer; that philosophy is one of "cost follows cause."[119] But there is no one method for establishing the proper formula by which a rate is determined - "our established rule that no single ratemaking methodology is mandated by the Con-

[117] Joseph P. Tomain, "Electricity Restructuring: A Case Study in Government Regulation," 33 Tulsa L.J. 827, 831 (1998). See *Richmond Power & Light v. Federal Power Comm'n*, 481 F.2d 490, 497 (D.C. Cir.), cert. denied sub nom. *Indiana & Mich. Elec. v. Anderson Power & Light*, 414 U.S. 1068 (1973).

[118] Operating cash, inventory, and accounts receivable constitute typical current assets. Current liabilities consist of accounts payable, such as taxes, wages, rents, interest payable, and short-term debt. Z. Bodie & R. Merton, "Finance," 427 (prelim. ed. 1998).

[119] As a formula, it can appear as such:

> Operating Expenses + Rate Base (tangible and intangible property less accrued depreciation, x percentage rate of return) = Rate Level (total amount of money the utility may earn as set by regulators).

stitution, which looks to the consequences a governmental authority, produces rather than the techniques it employs."[120]

Since the rate of return is measured against the value of the rate base, the rate base and methods used to determine it has generated considerable litigation over the years.[121] Over 100 years ago it was thought that the Constitution required rates to be set according to the actual present value of the assets employed in the public service. This method, known as the "fair value" rule, is exemplified by the decision in *Smyth v. Ames*.[122] Under the fair value approach, a "company is entitled to ask . . . a fair return upon the value of that which it employs for the public convenience," while on the other hand, "the public is entitled to demand . . . that no more be exacted from it for the use of [utility property] than the services rendered by it are reasonably worth."[123] In theory the *Smyth v. Ames* fair value standard mimics the operation of the competitive market. To the extent utilities' investments in plants are good ones (because their benefits exceed their costs) they are rewarded with an opportunity to earn an "above-cost" return, that is, a fair return on the current market value of the plant. To the extent utilities' investments turn out to be bad ones (such as plants that are canceled and so never used and useful to the public), the utilities suffer because the investments have no fair value and so justify no return. The Court made this choice in large part to prevent "excessive valuation or fictitious capitalization" from artificially inflating the rate base, lest "[t]he public … be subjected to unreasonable rates in order simply that stockholders may earn dividends."[124]

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[120] See, e.g., *FPC v. Texaco Inc.*, 417 U.S. 380, 387-390 (1974); *Wisconsin v. FPC*, 373 U.S. 294, 309 (1963); *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 602 (1944).

[121] Rates of return are not themselves rates in the statutory sense (e.g., dollars per kilowatt hour) but can be used to determine the rates. *Cf. Richmond Power & Light v. Federal Power Comm'n*, 481 F.2d 490, 497 (D.C. Cir.), cert. denied sub nom. I*ndiana & Mich. Elec. v. Anderson Power & Light*, 414 U.S. 1068 (1973).

[122] *Smyth v. Ames*, 169 U.S. 466, 546 (1898).

[123] Id. at 547.

[124] *Smyth v. Ames*, 169 U.S., at 543 - 546 (quoting *Covington & Lexington Turnpike Road Co. v. Sandford*, 164 U.S. 578, 596—597 (1896)).

Although the fair value rule gives utilities strong incentive to manage their affairs well and to provide efficient service to the public, it suffered from practical difficulties which ultimately led to its abandonment as a constitutional requirement. In response to these problems, Justice Brandeis advocated an alternative approach as the constitutional minimum, what has become known as the "prudent investment" or "historical cost" rule. Under the prudent investment rule, the utility is compensated for all prudent investments at their actual cost when made (their "historical" cost), irrespective of whether individual investments are deemed necessary or beneficial in hindsight. The utilities incur fewer risks, but are limited to a standard rate of return on the actual amount of money reasonably invested.[125]

Perhaps the most serious problem associated with the fair value rule was the "laborious and baffling task of finding the present value of the utility." The exchange value of a utility's assets, such as power plants, could not be set by a market price because such assets were rarely bought and sold. Nor could the capital assets be valued by the stream of income they produced because setting that stream of income was the very object of the rate proceeding. According to Brandeis, the Smyth v. Ames test usually degenerated to proofs about how much it would cost to reconstruct the asset in question, a hopelessly hypothetical, complex, and inexact process.[126]

In 1944 the Court abandoned the rule of *Smyth v. Ames* in the case of *FPC v. Hope Natural Gas Co.*[127] and held that the "fair value" rule is not the only constitutionally acceptable method of fixing utility rates. In *Hope Natural Gas* the Court ruled that historical cost was a valid basis on which to calculate utility compensation. ("Rates which enable [a] company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risk assumed certainly cannot be condemned as invalid, even though they might produce only a meager return on the so called 'fair value' rate base"). The Court also acknowledged in that case that "[I]t is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unreasonable, judicial inquiry . . . is at an end. The fact that the method employed to reach that result may contain infirmities is not then important. The economic judgments required in rate proceedings

[125] Id.

[126] *Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Comm'n,* 262 U.S. 276, 292-294 (1923) (Brandeis, J. dissenting).

[127] *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

are often hopelessly complex and do not admit of a single correct result. The Constitution is not designed to arbitrate these economic niceties."[128]

One of the elements always relevant to setting the rate under *Hope Natural Gas* is the return investors expect given the risk of the enterprise. ("[R]eturn to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks");[129] ("A public utility is entitled to such rates as will permit it to earn a return . . . equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties"). The risks a utility faces are in large part defined by the rate methodology because utilities are virtually always public monopolies dealing in an essential service, and so relatively immune to the usual market risks.[130] Although *Hope Natural Gas* did not repudiate everything said in Smyth, since fair value was still "the end product of the process of rate-making," federal and state commissions setting rates in the aftermath of the *Hope* case largely abandoned the old fair-value approach and turned to methods of calculating the rate base on the basis of "cost."[131]

The resulting method was not a simple calculation of rate base as the original cost of "prudently invested" capital presumably by reference to the utility's balance sheet at the time of the rate proceeding. Instead, "cost" came to mean "cost of service," that is, the cost of prudently invested capital used to provide the service.[132] This was calculated subject to deductions for accrued depreciation and allowances for working capital,("a typical electric utility rate base"), naturally leading utilities to minimize depreciation by using very slow depreciation rates (on the assumption of long useful lives),and to maximize working capital claimed as a distinct rate-base constituent.[133]

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[128] Id. at 602.

[129] *Bluefield Water Works & Improvement Co. v. Public Service Comm'n of West Virginia*, 262 U.S. 679, 692-693 (1923).

[130] *Hope* at 603.

[131] A. Kahn, "Economics of Regulations: Principles and Institutions," 40 - 41 (1988).

[132] Bonbright at 173; P. Garfield & W. Lovejoy, "Public Utility Economics," 56 (1964).

[133] *Verizon Communications Inc. v. FCC*, 535 U.S. 467, 479 (2002).

This formula, commonly called the "prudent-investment" rule, addressed the temptations on the utilities' part to claim a return on outlays producing nothing of value to the public. It was meant, on the one hand, to discourage unnecessary investment and the "fictitious capitalization" feared in *Smyth,* and so to protect ratepayers from supporting excessive capacity, or abandoned, destroyed or phantom assets. At the same time, the prudent-investment rule was intended to give utilities an incentive to make smart investments deserving a "fair" return, and thus to mimic natural incentives in competitive markets. In theory, then, the prudent-investment qualification gave the ratepayer an important protection by mitigating the tendency of a regulated market's lack of competition to support monopolistic prices.[134]

Costs, however, as used in calculating the rate base under the traditional cost-of-service method did not stand for all past capital expenditures, but at most for those that were prudent, while prudent investment itself could be denied recovery when unexpected events rendered investment useless.[135] And even when investment was wholly includable in the rate base, rate makers often rejected the utilities' "embedded costs," their own book-value estimates, which typically were geared to maximize the rate base with high statements of past expenditures and working capital, combined with unduly low rates of depreciation.[136]

Thus, the dominant rate form was based on the cost of service. Cost-of-service rates provided for reasonable return on all prudent and useful investments. In other words, the rate form accounted for the costs of operating the business plus a reasonable profit. Regulators spread the utility's total revenue requirement across different customer classes. In rate hearings, regulators attempted to distin-

[134] Id.

[135] *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 312 (1989). The Court upheld a Pennsylvania statute barring rate recovery of capital prudently invested in canceled power plants because the "overall impact of the rate orders," which allowed returns on common equity of 16 percent and overall returns of 11 to 12 percent, was not "constitutionally objectionable." 488 U.S., at 312; see also id., at 314 (" 'It is not theory, but the impact of the rate order which counts' ") (quoting *Hope Natural Gas Co.*, 320 U.S. at 602). The utilities in *Duquesne*, like the incumbents here, made "[n]o argument … that … reduced rates jeopardize the financial integrity of the companies, either by leaving them insufficient operating capital or by impeding their ability to raise future capital." 488 U.S. at 312. Nor did they show that allowed rates were "inadequate to compensate current equity holders for the risk associated with their investments under a modified prudent investment scheme." Ibid.

[136]See, e.g., *Hope Natural Gas*, 320 U.S., at 597 - 598.

guish between reasonable and unreasonable fuel costs, employee salaries, capital depreciation, and which capital resources were useful enough and acquired prudently enough to form a component of a "just and reasonable" rate.

Both the retail rates charged directly to the end user and the wholesale rates charged by one company to another for the purchase of a commodity that is ultimately resold to the consumer were subject to this method of regulation.[137] Intrastate retail rates were regulated by the States or municipalities, while wholesale rates were generally approved by federal regulators, since the transmission involved in wholesale sales was usually interstate.[138] Traditionally, the typical scheme of administrative rate setting at the federal level called for rates to be set out by the electric utility companies in proposed tariff schedules, on the model applied to railroad carriers under the Interstate Commerce Act.[139] After interested parties received notice of the proposals the tariffs would be accepted by the federal regulators as long as they were "reasonable," or "just and reasonable" and not "unduly discriminatory." The federal regulators could make such a determination after conducting an adminis-

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[137] All rates were subject to regulation this way: retail rates charged directly to the public and wholesale rates charged among businesses involved in providing the goods or services offered by the retail utility. Intrastate retail rates were regulated by the States or municipalities, with those at wholesale generally the responsibility of the federal government, since the transmission or transportation involved was characteristically interstate. See Phillips at 143.

[138] Wholesale markets involve sales of electric power among generators, marketers, and load serving entities (i.e., distribution utilities and competitive retail providers) that ultimately resell the electric power to end-use customers (e.g., residential, commercial, and industrial customers).

[139] Tariffs are documents that set out the terms and conditions of the electric utility's services and the rules a company will follow and the rates that a company will apply to all of its sales. It consists of a compilation of all of the effective rate schedules for a specific electric utility, including all of the contract terms and conditions and a copy of each form of service agreement. Tariffs must include an accurate description of all of the different services offered to the utility's customers and must be presented so that the exact rates, charges and service terms applying to any given sale or transmission of electricity are readily identifiable by the purchaser. This includes any scheduled rate increases with their effective dates. The utility publishing the tariff cannot deviate from its terms without governmental approval - it cannot charge its customers prices that are not specified in its tariff. See *DSCI Corp. v. Department of Telecomm. & Energy*, 449 Mass. 597, 600 n.5 (2007).

trative rate hearing, either on their own or after a complaint filed by some interested party or parties.[140] The States generally followed this same tariff-schedule model.[141]

Early state and federal agencies created two categories of regulated rates: "retail rates charged directly to the public and wholesale rates charged among businesses involved in providing" the regulated good or service. Under the FPA, the federal government regulates only interstate wholesale electric power sales and interstate electric power transmission, leaving to the states the regulation of rates charged to consumers.[142] State and local governments, therefore, generally focused on rates "as between businesses and the public" while the federal government regulated rates "as between businesses."[143]

Within this two-tiered regulatory structure, case law developed an evolving definition of the "just and reasonable" standard. As discussed, supra, the courts and regulators eventually settled on a system that attempted to match rates to the cost to the utility of providing the service, including "the cost of prudently invested capital used to provide the service." This "prudent-investor rule" was designed to provide incentives for utilities to invest in necessary capacity-building by allowing them to charge rates that would provide a fair rate of return on those investments while at the same time "protect[ing] ratepayers from supporting excessive capacity, or abandoned, destroyed, or phantom

[140] Federal Power Act Sections 205(c), (d), and (e), and 206(a). The first noteworthy federal rate-regulation statute was the Interstate Commerce Act of 1887, which was principally concerned with railroad rates but generally governed all interstate rates. It was the model for subsequent federal public-utility statutes like the Federal Power Act of 1920.

[141] In Massachusetts, for example, the Department of Public Utilities regulates the rates that electric companies may charge their customers. The base rates are set prospectively on the basis of historical data, and once established by the Department, a base rate does not fluctuate with a utility company's actual costs, but only changes when the company files for, and pursuant to the procedures set out in the statute, the Department approves, a base rate change. Thus, each electric utility must separately file a set of tariff documents setting out its proposed rates with the Department. The law requires that "[w]henever the department receives notice of any changes proposed to a tariff which represent a general increase in rates . . . it shall . . . thereafter hold a public hearing and make an investigation as to the propriety of such proposed changes." M. G.L. c. 164, s. 94.

[142] See FPA s. 201(a) 16 U.S.C. s. 824(a), (b)(1).

[143] *Verizon*, 535 U.S. at 478,479.

assets." These competing elements of cost of service regulation were intended to "mimic natural incentives in competitive markets." As a result, cost of service regulation would, in theory, lead to the same rates that would exist in a properly functioning unregulated market.[144]

In 1935, when the FPA became law, most electricity was sold by vertically integrated utilities that had constructed their own power plants, transmission lines, and local delivery systems. Although there were some interconnections among utilities, most operated as separate, local monopolies subject to state or local regulation. Their sales were "bundled," meaning that consumers paid a single charge that included both the cost of the electric energy and the cost of its delivery. There were few wholesale and interstate sales of electricity. Most wholesale connections were long-term power supply contracts by investor-owned utilities to sell and deliver power to nearby public power and cooperative utilities and municipalities that had little or no generating capacity of their own. Competition among utilities was not widespread.

Congress also limited federal regulation "to those matters which are not subject to regulation by the States," and reserved to the states "jurisdiction over facilities used for the generation of electric energy or over facilities used in local distribution or only for the transmission of electric energy in intrastate commerce"[145] Pursuant to these provisions, FERC has regulated wholesale power sales and interstate transmissions, and state agencies have retained jurisdiction over bundled retail transactions, including service issues and the intrastate sale and distribution of electricity through local distribution facilities.

Initially, as most transactions involved either a wholesale or a retail sale, and correspondingly transmission or local distribution facilities, this regulatory divide was straightforward in application. In fact, when Congress enacted the FPA the networks of high-voltage, long-distance transmission lines running in different directions across each other throughout the United States did not exist. As discussed, vertically integrated utilities separately built facilities capable of meeting the power needs of their customers. Over time, though, this business model evolved as conditions within the electric industry changed. Electric utilities became more interconnected through high-voltage transmission

[144] See *Verizon,* 535 U.S. at 481-89. see also *Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1510 (D.C.Cir.1984).

[145] FPA s 201(b), 16 U.S.C. s. 824(b).

systems. Constructed mainly for reliability purposes, these systems, or networks, provided more opportunities for interstate trade. Wholesale trade was nevertheless slow in developing.[146]

Eventually, utilities decided to cover demand spikes by sharing power, rather than by building more generation capacity. The transmission grid developed from these arrangements. In time, nonutility generators started producing electricity; and power marketers began to buy and resell electricity to other power marketers, utilities, or even directly to consumers. These industry participants do not own transmission lines, so they rely upon the utilities that own such facilities to provide transmission services. Together with their traditional bundled sales activity, vertically integrated utilities started "unbundling" their own services and developing their own power marketing units to buy and sell electricity at wholesale.[147]

B. The Filed Rate Doctrine

Where retailing and wholesaling utilities are independent, the impact of this wholesale/retail division on federal and state jurisdiction to conduct prudency review is clear. FERC has jurisdiction to determine whether a wholesaling utility has incurred costs imprudently. If FERC determines that costs were prudently incurred, it allows the wholesale rates to reflect those costs; otherwise, the wholesale rates cannot reflect those costs, and the wholesaler's stockholders, rather than its customers, must bear the burden of the utility's imprudence.[148]

As developed for purposes of the Federal Power Act, the "filed rate" doctrine has its genesis in *Montana-Dakota Utilities Co. v. Northwestern Public Service Co*.[149] The Court held that rates established in power sales contracts filed with and accepted by FERC's predecessor, the Federal Power Commission, were not only binding on the parties, but on the federal courts. In short, under the filed rate doctrine, once rates have been accepted for filing under FPA section 205, utilities must adhere to

[146] See Fed. Trade Comm'n, Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy pursuant to Section 1815 of the Energy Policy Act of 2005, at 19 (2007), available at www.ferc.gov/legal/fed-sta/ene-pol-act/epact-final-rpt.pdf.

[147] Id.

[148] See, e.g., *Violet v. FERC*, 800 F.2d 280 (CA1 1986).

[149] *Montana-Dakota Utilities Co. v. Northwestern Public Service Co.,* 341 U.S. 246, 251-252 (1951).

those rates absent a waiver.[150] The rate filed by the wholesale seller of electricity or fixed by FERC is the only lawful charge and "[d]eviation from it is not permitted upon any pretext."[151] Unless the filed rates are challenged administratively, the filed rates become the legal rates. If the rates are challenged, then FERC decides whether the rates are "just and reasonable" and not "unduly discriminatory."[152]

"The filed rate doctrine was developed in the 19th century as part of a program to regulate the ruthless exercise of monopoly power by the Nation's railroads."[153] During that period, railroad companies often charged substantially higher rates on noncompetitive routes, granted secret discounts to preferred shippers, and overcharged competitors of preferred customers. These concerns, among others, led to the passage of the Interstate Commerce Act ("ICA") in 1887. The "great purpose" of the ICA, as the Supreme Court has said, was "to regulate commerce, whilst seeking to prevent unjust and unreasonable rates, ... to secure equality of rates as to all, and to destroy favoritism, these last being accomplished by requiring the publication of tariffs, and by prohibiting secret departures from such tariffs, and forbidding rebates, preferences, and all other forms of undue discrimination." Under the ICA, a carrier could charge a shipper only those rates incorporated in a tariff that the carrier had filed with the ICC. The rate became effective after it was filed unless the rate or the practice employed by the carrier was deemed unreasonable by the ICC. The requirement that carriers collect only the rate they filed, or that the ICC established, became commonly referred to as the "filed rate doctrine." The doctrine, as applied, also meant that private parties could not contract for a price other than the filed rate.[154]

The doctrine also holds that interstate power rates filed with FERC or fixed by FERC must be given binding effect by state utility commissions determining intrastate rates. In other words, a state utility

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[150] *Arkansas Louisiana Gas Co. v. Hall*, 453 U.S. 571, 577, 101 S.Ct. 2925, 69 L.Ed.2d 856 (1981).

[151] *AT & T v. Central Office Telephone, Inc.*, 524 U.S. 214, 222, 118 S.Ct. 1956, 141 L.Ed.2d 222 (1998).

[152] *Montana-Dakota Utilities Co.* 341 U.S. at 251-252 (1951).

[153] *Maislin Industries, U.S., Inc. v. Primary Steel, Inc.*, 497 U.S. 116, 138, (1990) (Stevens, J., dissenting).

[154] *New York, N.H. & H.R. Co. v. ICC*, 200 U.S. 361, 391 (1906).

commission setting retail prices must allow, as reasonable operating expenses, costs incurred as a result of paying a FERC-determined wholesale price.[155]

These decisions are based on the need to enforce the exclusive jurisdiction assigned by Congress to FERC over the regulation of interstate wholesale utility rates:

> [O]ur decisions have squarely rejected the view . . . that the scope of FPC jurisdiction over interstate sales of gas or electricity at wholesale is to be determined by a case-by-case analysis of the impact of state regulation upon the national interest. Rather, Congress meant to draw a bright line, easily ascertained, between state and federal jurisdiction, making unnecessary such case-by-case analysis. This was done in the Power Act by making FPC jurisdiction plenary and extending it to all wholesale sales in interstate commerce except those which Congress has made explicitly subject to regulation by the States.[156]

Once FERC sets such a rate, a State may not conclude in setting retail rates that the FERC approved wholesale rates are unreasonable. A State must rather give effect to Congress' desire to give FERC plenary authority over interstate wholesale rates, and to ensure that the States do not interfere with this authority.

1. The Doctrine as Applied

The typical application of the filed rate doctrine involves an electric utility company purchasing power for resale that is liable for a FERC fixed wholesale rate charged by the power supplier, such as between a generating company selling power to a distribution company. In that situation, for a state ratemaking agency to disregard a FERC-filed rate would be inconsistent with the exclusive federal regulatory scheme over interstate wholesale power prices. The FERC approved rate at which the distribution company purchased the power for resale would not be fully recognized as a cost in the retail market, thereby forcing that company to sell power at less than its reasonable cost as determined by the federal agency.

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[155] Some state courts have examined this interplay in determining the effect of FERC-approved wholesale power rates on retail rates for electricity. *See Narragansett Electric Co. v. Burke,* 119 R. I. 559 (1977), *cert. denied,* 435 U.S. 972 (1978); *Eastern Edison Co. v. Department of Public Utilities,* 388 Mass. 292 (1983).

[156] *FPC v. Southern California Edison Co.,* 376 U. S. 205, 215-216 (1964).

Thus, the filed rate doctrine ensures that sellers of wholesale power governed by FERC can recover the costs incurred by their payment of just and reasonable FERC set rates. When FERC sets a rate between a seller of power and a wholesaler-as-buyer, a State may not exercise its jurisdiction over retail sales to prevent the wholesaler-as-seller from recovering the costs of paying the FERC-approved rate.

FERC does not, however, have jurisdiction to determine whether it might be imprudent, given other purchasing options, for a retailing utility to purchase power at the FERC-approved wholesale rate.[157] The state utility commissions have jurisdiction to determine, for example, that the retail utility does not need the power, or could obtain power from other sources at a lower cost.[158] Thus, although a state utility commission cannot decide that a retail utility should have bought wholesale power from a given source at other than the FERC-approved wholesale rate, it can decide that the utility should not have bought power from that source at all. In short, the reasonableness of charging a rate as a wholesaler is distinct from the reasonableness of incurring that charge as a purchaser.[159]

In both the *Narragansett* and *Public Service Co. of Colorado v. Public Utilities Comm'n* cases, the courts observed that an increase in FERC - approved wholesale rates need not lead to an increase in retail rates. Both decisions expressly stated, however, that such a divergence between wholesale and retail rates would occur only if costs other than those resulting from the purchases of FERC-regulated power or gas were to decrease. ("The commission . . . may treat the proposed rate increase as it treats other filings, . . . and investigate the overall financial structure of [the power company] to determine whether the company has experienced savings in other areas which might offset the increased price") (emphasis added);[160] ("[The commission] may treat the [increase] as it treats other filings for proposed rate increases . . . [and] investigate whether [either of the gas companies] has experienced savings in other areas which might offset the increased price for natural gas to consumers") (emphasis added).[161]

157 *See, e.g., Southern Company Services, Inc.,* 28 FERC 61,349 (1984).

158 *Nantahala, supra,* at 476 U. S. 972.

159 *See, e.g., Pike County Light & Power Co. v. Pennsylvania Public Utility Comm'n,* 77 Pa.Commw. 268, 273-274, 465 A.2d 735, 737-738 (1983).

160 *See Narragansett,* 119 R. I., at 568, 381 A.2d at 1363.

161 P*ublic Service Co. of Colorado v. Public Utilities Comm'n*, 644 P.2d 933, 941 (Colo. 1982).

This qualification makes sense. If, for example, the FERC approved price of wholesale power rises slightly, but a retailer's costs of transformation and transmission significantly decline, the retailer's overall costs might well decrease. A decrease in its retail rates might therefore be appropriate even though the cost of purchasing FERC-regulated power had increased.

C. Establishing Wholesale Power Rates through Negotiated Contracts

Among the stated purposes for enacting the FPA (and adopting the filed rate doctrine) was the prevention of price discrimination and the imposition of unjust and unreasonable rates by requiring that all customers receive the same published rate.[162] For that reason, the FPA requires public utilities subject to FERC's jurisdiction to file tariff schedules with it displaying their rates and service terms, along with related contracts for jurisdictional service.[163] The FPA prohibits such utilities from

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[162] See *Lockyer v. FERC*, 383 F.3d 1006 (2004).

[163] 16 U.S.C. s. 824d(c). Section 205(c)-(d) of the FPA provides:

> (c) Schedules
> Under such rules and regulations as the Commission may prescribe, every public utility shall file with the Commission, within such time and in such form as the Commission may designate, and shall keep open in convenient form and place for public inspection schedules showing all rates and charges for any transmission or sale subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications, and services.
>
> (d) Notice required for rate changes
> Unless the Commission otherwise orders, no change shall be made by any public utility in any such rate, charge, classification, or service, or in any rule, regulation, or contract relating thereto, except after sixty days' notice to the Commission and to the public. Such notice shall be given by filing with the Commission and keeping open for public inspection new schedules stating plainly the change or changes to be made in the schedule or schedules then in force and the time when the change or changes will go into effect. The Commission, for good cause shown, may allow changes to take effect without requiring the sixty days' notice herein pro-

"grant[ing] any undue preference or advantage to any person or subject[ing] any person to any undue prejudice or disadvantage."[164] Whenever FERC finds that rates charged by any such utility "for any transmission or sale," or that any utility's practice "affect[ing] such rate" is "unjust, unreasonable, unduly discriminatory or preferential," the FPA directs FERC to prescribe a lawful rate or practice for the future.[165]

The FPA requires FERC to regulate public utilities for the benefit of consumers.[166] Two FPA provisions, sections 205 and 206, govern FERC's authority and establish its obligation to regulate rates for the interstate sale and transmission of electricity. Through these provisions, the FPA empowers FERC to regulate wholesale electricity rates but not the rates charged directly to consumers by local utilities.[167] The protection the FPA offers consumers is therefore indirect: By assuring that wholesale vendors of electric power charge fair rates to retailers, the FPA protects against the need to pass excessive rates on to consumers. At the same time, by assuring that wholesale vendors of electric power receive a fair rate of return, the FPA assures that such sellers have the incentive to continue to produce and supply power.

The Court of Appeals for the First Circuit describes the interaction of sections 205 and 206 in the following manner:

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vided for by an order specifying the changes so to be made and the time when they shall take effect and the manner in which they shall be filed and published.

[164] 16 U.S.C. s. 824d(b).

[165] 16 U.S.C. s. 824e.

[166] See *Pa. Water & Power Co. v. Fed. Power Comm'n*, 343 U.S. 414, 418 (1952) ("A major purpose of the whole [Federal Power] Act is to protect power consumers against excessive prices."); *California ex rel. Lockyer v. FERC* (Lockyer), 383 F.3d 1006, 1017 (9th Cir.2004) (describing "protecting consumers" as the FPA's "primary purpose"); see also *Atl. Ref. Co. v. Pub. Serv. Comm'n*, 360 U.S. 378, 388 (1959) ("The [Natural Gas] Act was so framed as to afford consumers a complete, permanent and effective bond of protection from excessive rates and charges.").

[167] See 16 U.S.C. ss. 824(a), (b)(1).

> In regulating electricity rates, the Federal Power Act follows (with variations) a well-developed model: the utility sets the rates in the first instance, subject to a basic statutory obligation that rates be just and reasonable and not unduly discriminatory or preferential. FERC, which inherited the powers of its predecessor (the Federal Power Commission), can investigate a newly filed rate, or an existing rate, and, if the rate is inconsistent with the statutory standard, order a change in the rate to make it conform to that standard.
>
> The procedural incidents and FERC's ability to provide refunds vary depending on whether the proceeding is one to investigate a new rate filing or an existing rate. For example, in the former case, the burden is on the utility to show that its rate is lawful, and, in the latter, the burden is on the FERC staff or the customer to show that the rate is unlawful. In both circumstances, however, the statutory test of lawfulness is phrased in the same terms.[168]

Additionally, when utilities set rates in the first instance, they may do so via privately-negotiated contracts, filed pursuant to section 205(c) - (d). Thus, the FPA, by its terms, creates a role for privately negotiated wholesale power contracts, balanced by FERC's obligation to ensure that those contracts rates, like unilaterally filed rates, are "just and reasonable."

Contracts fixing utility rates have been traditionally disfavored by the courts because, practically by definition, they suggest different treatment of similarly-situated customers, thereby conflicting with one of the basic principle of non-discrimination.[169] But the customers in interstate sales of electricity have tended to be large companies, and negotiated contracts formed a useful means of allocating risks. When Congress imposed rate regulation in the Federal Power Act (and again in the Natural Gas Act several years later) it acknowledged - in contrast to its initially pure tariff-based regulation of railroads and telephone companies - that contracts between individual parties could also be used to set rates.[170]

As a result of the differences in their regulatory focus, important distinctions in methodology developed between federal and state energy rate regulation. Knowing that state regulators focused on rates charged directly to the public and following Congress's "acknowledge[ment] that contracts be-

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[168] *Boston Edison Co. v. FERC*, 233 F.3d 60, 64 (1st Cir.2000) (footnote and internal citations omitted).

[169] See, e.g., *New York v. United States*, 331 U.S. 284, 296-97 (1947).

[170] See, e.g., 16 U.S.C. 824d(d), 824e(a).

tween commercial buyers and sellers could be used in rate-setting,"[171] the FPC and, later, FERC became less inclined to step in and alter filed rates charged among businesses in the energy industry.

1. *Mobile* - *Sierra* Doctrine

In its *Mobile* and *Sierra* decisions, the Supreme Court sought to integrate this new respect for contracts under the Federal Power Act with the traditional scheme of regulation. It held that where the electrical utility and its customer have contracted for a particular rate, and the Commission has accepted the contract for filing and then allowed the rate to become effective, (1) the utility cannot unilaterally (i.e., without the customer's consent) file a new rate under section 205 to supersede the agreed-upon rate; and (2) the Commission's power under section 206 to alter the existing contract rate under the just and reasonable standard is also curtailed.[172] For example, FERC cannot order an increase in a contracted-for rate merely by finding that the rate is unreasonably low in the traditional sense that it is insufficient to produce a reasonable return on capital for the seller.[173]

Instead, importing a term that does not appear in the rate regulation provisions of the Federal Power Act or the Natural Gas Act, the Supreme Court said that the contract rate could be raised only if it offended the "public interest"; and the example given was of a rate so low that it threatened the survival of the utility, excessively burdened other consumers, or imposed undue discrimination.[174] This solution based on a public interest standard makes practical sense when one understands the facts out of which *Mobile* and *Sierra* arose, namely, attempts to raise rates by sellers in violation of their contracts. But it left several issues unresolved (some of which have since been addressed) such as when the contract should be read as setting a binding rate and what circumstances might justify FERC supplanting a contract rate as contrary to the public interest.[175]

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[171] Id. (citing section 205(d) and *Mobile*, 350 U.S. at 338-39, 76 S.Ct. 373).

[172] *Sierra*, 350 U.S. at 352-55; accord *Mobile*, 350 U.S. at 347 (same as to sections 4 and 5 of the Natural Gas Act).

[173] *Sierra*, 350 U.S. at 354-55; accord *Northeast Utils. Serv. Co. v. FERC*, 55 F.3d 686, 690 (1st Cir. 1995).

[174] *Sierra*, 350 U.S. at 355.

[175] See *Morgan Stanley Capital Group Inc. v. Pub. Util. Dist. No. 1 of Snohomish County*, 128 S. Ct. 2733, 2747–48 (2008) (holding that FERC can only declare a mutually agreed-upon contract for electricity

Nevertheless, the Court's underlying assumption in reaching this decision was that "[i]n wholesale markets, the party charging the rate and the party charged were often sophisticated businesses enjoying presumptively equal bargaining power, who could be expected to negotiate a `just and reasonable' rate as between the two of them." The equal market power of those businesses and the role of state regulation of rates charged to consumers allowed the federal government to set a relatively high bar for proving that a wholesale contract was unjust or unreasonable based on impact on the public. Federal agencies, including the FPC and its successor agency FERC, thus saw their "principal regulatory responsibility" as preventing discrimination "by favorable contract rates between allied businesses" as compared to other businesses. At the same time, *Sierra's* caution that federal regulators should reform contracts if that was "necessary in the public interest," (internal quotation mark omitted), confirmed a continuing federal responsibility to review the impact of wholesale contracts on the public, even though the federal government did not directly regulate rates charged to consumers.[176]

Accordingly, under the *Mobile-Sierra* doctrine,[177] FERC must presume that the rate set out in a freely negotiated wholesale contract for electric power meets the "just and reasonable" requirement imposed by law. The presumption may be overcome only if FERC concludes that the contract seriously harms the public interest. *Mobile-Sierra*, then, stands for the proposition that in certain circum-

as unjust and unreasonable when the public consumer is seriously harmed); *La. Energy & Power Auth. v. Fed. Energy Regulatory Comm'n,* 141 F.3d 364, 365 (D.C. Cir. 1998) (holding that FERC may rely on market-based rates in a competitive market to satisfy the "just and reasonable" requirement); *Elizabethtown Gas Co. v. Fed. Energy Regulatory Comm'n*, 10 F.3d 866, 870 (D.C. Cir. 1993) (holding that FERC's approval of market-based rates does not violate its obligation to ensure just and reasonable rates). There are, however, opponents to market-based rates. See, e.g., Jeffrey McIntyre Gray, "Reconciling Market-Based Rates with the Just and Reasonable Standard," 26 Energy L.J. 423, 429–31 (2005) (explaining that FERC cannot ensure just and reasonable rates if it cannot assure that a competitive market exists); Gerald Norlander, "May the FERC Rely on Markets To Set Electric Rates?," 24 Energy L.J. 65, 66, 88 (2003) (concluding that FERC does not have the authority under existing law to use market-based rates to set the standard).

[176] *Sierra*, 350 U.S. at 355.

[177] This shorthand takes its name from the two Supreme Court cases previously discussed, that were decided on the same day, *United Gas Pipe Line Co. v. Mobile Gas Service Corp. (Mobile)*, 350 U.S. 332, (1956), and *Federal Power Commission v. Sierra Pacific Power Co. (Sierra)*, 350 U.S. 348 (1956).

stances, a presumption applies that private parties to a wholesale electric power contract have negotiated a "just and reasonable" contract over a designated period of time, lawful under the FPA throughout that period. That presumption can be rebutted by establishing that the contract adversely affects the public interest - that is, the interests of the consuming public that the FPA protects.[178]

V. Industry Growth and Decline

As things stood, federal and state officials continued to regulate electric utility companies as vertically-integrated monopolies for approximately 70 years. For much of this period it was considered economically inefficient and technologically challenging to have multiple sources of generation, transmission, and distribution facilities serving customers in the same geographic area. Competition was considered impractical and not in the public interest because it would require costly duplication of facilities and likely engender competition that would not be sustainable because of economies of scale. Electric utility companies continuously expanded the size of their plants as power generation became more cost and energy efficient. The per unit costs of electricity decreased as the ratio of the amount of the energy used to the amount generated increased. As a result, utilities were able to generate more electricity at lower costs. The traditional cost-of-service rate formula basically meant that if an electric utility company operated efficiently and provided its customers with reliable service, it would recover its cost while also earning a return on its investments.[179]

The period from 1935 to 1965, particularly after World War II, has been referred to as the "golden age" of the electric power industry.[180] As the size of generating plants grew, the demand for electricity increased as well at roughly seven percent each year. Continued technological advances, together with reliable and predictable growth, resulted in little to no increase in the average generating cost

[178] Id.

[179] See generally J. Bonbright et al., "Principles of Public Utility Rates," (2d ed. 1988); Charles F. Phillips, Jr., "The Regulation of Public Utilities: Theory and Practice," 435-36 (3d ed. 1993); Sidney A. Shapiro & Joseph P. Tomain, "Regulatory Law and Policy: Cases and Materials," 107-15 (3d ed. 2003).

[180] Hyman, supra note 1, at 119-130.

for the electric utility, with consumer rates also remaining at the same level or increasing only slightly.[181]

Beginning in the mid -1960s, though, the marginal costs for electric utilities began to exceed their average costs, meaning the per unit costs of electricity increased as the ratio of the amount of the energy used to the amount generated decreased, resulting in lower industry profits. Since the traditional cost-of-service rate formula encouraged capital investment and plant expansion, utilities invested in new plants, particularly nuclear power plants, to generate more power to sell.[182] Unfortunately, from the mid-1960s through the 1970s, electric utility companies, along with the rest of the country, faced inflation, rising labor costs, the Vietnam War, growing environmental concerns with carbon-based fuel use, the OPEC and Iranian Oil Embargoes, and eventually the Three Mile Island accident and the corresponding failure of the nuclear power industry. So as electric utilities expanded and tried to capture their high fixed costs, electricity rates rose and consumers, contrary to industry expectations, consumed less electricity than predicted, meaning the increased capital expansion to boost power production ended up contributing to excess, or unused, capacity. Regulators were placed in an untenable position - they were appointed by elected officials who answered to the ratepayers and could not readily approve rate increases based on capital investments that ultimately proved to be unnecessary, regardless of historical precedent and the reasonableness behind the decisions to make the investments.

The electric utility industry suffered accordingly.[183] For example, in April of 1974, the Consolidated Edison Company, plagued by soaring fuel costs and the effects of energy conservation by consumers, suspended payment of its quarterly dividend - something the company had never previously

[181] Sidney A. Shapiro & Joseph P. Tomain, "Regulatory Law and Policy: Cases and Materials," 107-15 (3d ed. 2003).

[182] Harvey Averch & Leland L. Johnson, "Behavior of the Firm Under Regulatory Constraint," 52 Am. Econ. Rev. 1052 (1962).

[183] Tomain, supra note 34, at 82-86; FERC Staff, Office of Economic Policy, "Regulating Independent Power Producers: A Policy Analysis, in Competition in Electricity," 361, 368-69 (James L. Plummer & Susan Troppmann eds., 1990).

done since it started paying them in 1885. Shareholders at the annual meeting sobbed and shouted for the chairman's ouster, and some had to be driven from the room by security guards.[184]

Committees in both Houses of Congress noted the magnitude of the Nation's energy problems and the need to alleviate those problems by promoting energy conservation and more efficient use of energy resources.[185] Congress was aware that domestic oil production had lagged behind demand, and that the Nation had become increasingly dependent on foreign oil. Approximately one-third of the electricity in this country was generated through use of oil and natural gas, and electricity generation was one of the fastest growing segments of the Nation's economy.[186] In part because of their reliance on oil and gas, electricity utilities were plagued with increasing costs and decreasing efficiency in the use of their generating capacities; each of these factors had an adverse effect on rates to consumers and on the economy as a whole.[187] The House Committee observed: "Reliance upon imported oil to meet the bulk of U.S. oil demands could seriously jeopardize the stability of the Nation's economy and could undermine the independence of the United States."[188] Indeed, the Nation had recently experienced severe shortages in its supplies of natural gas.[189]

The House and Senate Committees both noted that the electricity industry consumed more than 25 percent of the total energy resources used in this country, while supplying only 12 percent of the user demand for energy.[190] In recent years, the electricity utility industry had been beset by numerous

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[184] Peter Kilborn, "Con Ed, Hit by Fuel Costs, Omits Quarterly Dividend; Con Edison, Hit by Fuel Costs, Omits Its Dividend," The New York Times, April 24, 1974, page 85; Jeff Makholm, Eugene Meehan, and Julia Sullivan, "Ex Ante or Ex Post? Risk Hedging and Prudence in the Restructured Power Business," The Electricity Journal, Vol. 19, Issue 3, Note 4 (April 2006).

[185] *See* S.Rep. No. 95-442, at 7-10; H.R.Rep. No. 95-543, vol. I, pp. 5-10 (1977); H.R.Rep. No. 95-496, pt. 4, pp. 3-7, 125-130 (1977).

[186] S.Rep. No. 95-361, p. 32 (1977).

[187] S.Rep. No. 95-442 at 9.

[188] Se*e* H.R.Rep. No. 95-543, vol. I, at 5-6.

[189] *Id.* at 7.

[190] S.Rep. No. 95442, at 7; H.R.Rep. No. 9496, pt. 4, at 125.

problems, which resulted in higher bills for the consuming public, a result exacerbated by the rate structures employed by most utilities.[191] Congress naturally concluded that the energy problem was nationwide in scope, and that these developments demonstrated the need to establish federal standards regarding retail sales of electricity, as well as federal attempts to encourage conservation and more efficient use of scarce energy resources.[192]

Congress also determined that the development of cogeneration and small power production facilities would conserve energy. The evidence before Congress showed the potential contribution of these sources of energy: it was estimated that, if proper incentives were provided, industrial cogeneration alone could account for 7-10 percent of the Nation's electrical generating capacity by 1987.[193] Accordingly, by the late-1970s Congress determined that conservation by electric utilities of oil and natural gas was essential to the success of any effort to lessen the country's dependence on foreign oil and to control consumer costs.

A. The Public Utility Regulatory Policies Act

The Public Utility Regulatory Policies Act ("PURPA") of 1978 was part of a package of legislation, approved the same day, designed to combat the nationwide energy crisis. In addition to PURPA, the package included the Energy Tax Act of 1978; the National Energy Conservation Policy Act; the Powerplant and Industrial Fuel Use Act of 1978; and the Natural Gas Policy Act of 1978.[194] Section 210 of PURPA's Title II,[195] sought to encourage the development of cogeneration and small power production facilities. A "cogeneration facility" is one that produces both electric energy and steam or some other form of useful energy, such as heat.[196] A "small power production facility" is one that

[191] S.Rep. No. 95-442, at 26.

[192] *See id.* at 24-32; H.R.Rep. No. 95-496, pt. 4, at 131-133, 136-138, 170-171.

[193] S.Rep. No. 95-442, at 21, 23.

[194] Public Utilities Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (codified as amended in scattered sections of 5, 15, 16, 26, 30, 42, & 43 U.S.C.).

[195] 92 Stat. 3144, 16 U.S.C. s. 824a-3.

[196] 16 U.S.C. s. 796(18)(A).

has a production capacity of no more than 80 megawatts and uses biomass, waste, or renewable resources (such as wind, water, or solar energy) to produce electric power.[197] Congress believed that increased use of these sources of energy would reduce the demand for traditional fossil fuels. But it also thought that two problems impeded the development of nontraditional generating facilities: (1) traditional electricity utilities were reluctant to purchase power from, and to sell power to, the nontraditional facilities, and (2) the regulation of these alternative energy sources by state and federal utility authorities imposed financial burdens upon the nontraditional facilities, and thus discouraged their development.[198]

Section 210 of PURPA was designed to encourage the development of cogeneration facilities and small power production facilities and to reduce the demand for fossil fuels. Section 210(a) directed FERC to prescribe rules requiring electric utilities to deal with qualifying cogeneration and small power facilities. With respect to utilities' purchases of electricity from such facilities, section 210(b) provides that rates set by FERC "shall be just and reasonable to the electric consumers of the electric utility and in the public interest," shall not discriminate against qualified cogeneration and small power facilities, and shall not exceed "the incremental cost to the electric utility of alternative electric energy." Following rulemaking proceedings, FERC promulgated a rule requiring utilities to purchase electric energy from a qualifying facility at a rate equal to the utility's "full avoided cost," i.e., the cost to the utility which, but for the purchase from the qualifying facility, would be incurred by the utility in generating the electricity itself or purchasing the electricity from another source. In other words, these new producers would produce electricity more cheaply than that produced by the electric utility company, but the electric utility would pay the producers the utilities' own higher production cost, not the production cost of the new producers. Thus, small power producers and cogenerators were encouraged to enter the market and to connect to an electric utility company with a guarantee that the company would pay for the electricity generated by these two "qualifying facilities" at its own avoided cost.[199] FERC also promulgated a rule requiring utilities to make such physical interconnec-

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[197] s.796 (17)(A).

[198] PURPA, for all its complexity, contains essentially three requirements: (1) s. 210 has the States enforce standards promulgated by FERC; (2) Titles I and III direct the States to consider specified ratemaking standards; and (3) those Titles impose certain procedures on state commissions.

[199] See, *Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp.*, 461 U.S. 402, 406 (1983).

tions with cogenerators and small power producers as are necessary to bring about purchases or sales of electricity authorized by PURPA.

Although FERC recognized that the rule would not directly provide any rate savings to consumers, it deemed it more important at this time that the rule would provide a significant incentive for the development of cogeneration and small power production, and that ratepayers and the nation as a whole will benefit from the decreased reliance on scarce fossil fuels and the more efficient use of energy.

Also, because PUHCA would create major burdens for nonutilities who wished to develop QFs, PURPA specifically exempted (in section 210) developers of QFs from PUHCA. If this had not been done, then nonutility companies wishing to develop QFs would have been forced to submit themselves to SEC regulation which in most instances would have forced them to divest themselves of their nonutility related business - which, at least for cogenerators, was their principal business activity. FERC's regulations also allowed a utility to participate as a partial owner of a QF so long as its ownership share did not exceed 50 percent.

B. Open Access Non-Discriminatory Transmission Services

Constructing and operating generation capacity at prices lower than the embedded generation costs of traditional utilities, these alternative generators, or suppliers, created a wholesale market for low-cost power. But the growth of this new wholesale market faced a serious obstacle. "As entry into wholesale power generation markets increased, the ability of customers to gain access to the transmission services necessary to reach competing generators and suppliers became increasingly important."[200] Despite the advances in technology that have increased the number of electricity providers and have made it possible for a "customer in Vermont [to] purchase electricity from an environmentally friendly power producer in California or a cogeneration facility in Oklahoma," the traditional electric utilities that had built the high-cost generation capacity retained ownership of the transmission lines that had to be used by their competitors to deliver electric energy to wholesale and retail customers.[201] The utilities' control of the transmission facilities gave them the power either to refuse to deliver the electric energy produced by competitors or to deliver competitors' power on

[200] Id. at 33,062.

[201] *Transmission Access Policy Study Group v. FERC*, 225 F.3d 667, 681 (CADC 2000).

terms and conditions less favorable than those they apply to their own transmissions.[202] And the owners of the transmission lines exercised this power, denying alternative generators access to their transmission lines on competitive terms and conditions.[203] Like a cargo ship out of the water, power generators not permitted to use the utilities' transmission lines on reasonable terms have no way to transmit their power to customers.

FERC then began requiring utilities to file open access transmission tariffs that permitted other suppliers to transmit power over their lines under certain circumstances, such as when a utility sought authorization to merge with another utility or to sell power at market-based rather than cost-based rates. Congress enacted the Energy Policy Act in 1992, which amended sections 211 and 212 of the FPA to authorize FERC to order individual utilities to provide transmission services to unaffiliated wholesale generators (i.e., to "wheel" power - transmit power for wholesale sellers of power over the utilities' transmission lines) on a case-by-case basis.[204] FERC "aggressively implemented" amended sections 211 and 212 and ordered a utility to "wheel" power for a complaining wholesale competitor 12 times, in 12 separate proceedings. FERC soon concluded, however, that these individual proceedings were too costly and time consuming to provide an adequate remedy for undue discrimination throughout the market.[205]

Consequently, in 1995, FERC proposed a rule that would "require that public utilities owning and/or controlling facilities used for the transmission of electric energy in interstate commerce have on file tariffs providing for nondiscriminatory open-access transmission services."[206] The stated purpose of the proposed rule was "to encourage lower electricity rates by structuring an orderly transition to competitive bulk power markets."[207] The proposed rule declared that:

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[202] Order No. 888, at 31,643 - 31,644.

[203] *Transmission Access Policy Study Group*, 225 F.3d at 681.

[204] Pub. L. No. 102-486, 106 Stat. 2776, 2915-16 (1992) (codified at 16 U.S.C. sections 824jk).

[205] Order No. 888, at 31,646.

[206] Notice of Proposed Rulemaking, FERC Stats. & Regs., Proposed Regs., 1988—1999, Par. 32,514, p. 33,047, 60 Fed. Reg. 17662.

[207] Id. at 33,048.

> The key to competitive bulk power markets is opening up transmission services. Transmission is the vital link between sellers and buyers. To achieve the benefits of robust, competitive bulk power markets, all wholesale buyers and sellers must have equal access to the transmission grid. Otherwise, efficient trades cannot take place and ratepayers will bear unnecessary costs. Thus, market power through control of transmission is the single greatest impediment to competition. Unquestionably, this market power is still being used today, or can be used, discriminatorily to block competition.[208]

1. Order No. 888

Ultimately, in 1996 FERC relied on both its existing authority under sections 205 and 206 of the FPA to cure unduly discriminatory or preferential rules, regulations, practices, or contracts affecting public utility rates for transmission in interstate commerce,[209] and its past experience in restructuring the natural gas industry[210] to issue Orders Nos. 888 and 889[211] to "prevent this discrimination by requiring all public utilities owning and/or controlling transmission facilities to offer non-discriminatory open access transmission service."[212]

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[208] Id., at 33,049.

[209] 16 U.S.C. sections 824d-e.

[210] See *Associated Gas Distribs. v. FERC,* 824 F.2d 981 (D.C. Cir. 1987).

[211] Promoting Wholesale Competition Through Open Access Nondiscriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, Order No. 888, FERC Stats. & Regs. p. 31,036 (1996) ("Order No. 888"), clarified, 76 FERC p. 61,009 and 76 FERC p. 61,347 (1996), on reh'g, Order No. 888-A, FERC Stats. & Regs. p 31,048, clarified, 79 FERC p. 61,182 (1997), on reh'g, Order No. 888-B, 81 FERC p. 61,248 (1997), on reh'g, Order No. 888-C, 82 FERC p. 61, 046 (1998); Open Access Same-Time Information System and Standards of Conduct, Order No. 889, FERC Stats. & Regs. p. 31,049 (1997), on reh'g, Order No. 889-B, 81 FERC p. 61,253 (1997), aff'd in part, remanded in part, *Transmission Access Policy Study Group, et al. v. FERC*, 225 F.3d 667 (D.C.Cir.2000), aff'd sub nom., *New York v. FERC*, 535 U.S. 1 (2002).

[212] Open Access NOPR, p. 32,514 at 33,052.

The orders required transmission owners to file transmission tariffs that make transmission charges visible, that include terms and conditions applicable to all parties and that apply to transmission owners themselves when purchasing or selling electric energy at wholesale. Under open access and comparable pricing, transmission owners are not afforded a competitive advantage by virtue of transmission ownership. Competition is advanced because parties face the identical price for their transmission use whether they own the transmission facilities or not. Order No. 888 required utilities that owned transmission facilities to guarantee all market participants non-discriminatory access to those facilities. That is, FERC required all transmission-owning utilities to provide transmission service for electricity generated by others on the same basis that they provided transmission service for the electricity they themselves generated.

To bring about this introduction of competition, FERC required public utilities to "functionally unbundle" their wholesale generation and transmission services by stating separate rates for each service in a single tariff and offering transmission service under that tariff on an open-access, non-discriminatory basis.[213] Stated yet again, in order for customer choice to spur competition in a market, customers must be able to compare the prices and terms of the various products and services that are available, and services must be available on comparable terms to suppliers. This requires the identification of distinct products and services and the availability of clear and transparent prices. Thus, electric companies must separate the services and unbundle the rates for the services that they provide.

More specifically, "functional unbundling" under Order Nos. 888 and 889 required dividing the electric utilities' product into separate and distinct wholesale sales of electricity and wholesale transmissions of electricity, while also requiring the electric utility to set out separate rates for wholesale generation, transmission, and ancillary services. The orders require electric utilities that own or control transmission facilities to offer transmission service to customers on terms comparable to the transmission service they use in serving their own power customers. Furthermore, the orders stipulate that certain minimum terms and conditions of service are necessary to provide nondiscriminatory open-access service and require electric utilities to file such open access nondiscriminatory tariffs setting out those terms and conditions. Lastly, the orders require electric utilities to develop and maintain a same-time information system that will give potential and existing transmission users the

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[213] See *New York*, 535 U.S. at 11; see generally *California Indep. Sys. Operator Corp. v. FERC*, 372 F.3d 395, 397 (D.C.Cir.2004).

same access to transmission information that the utility enjoys (called the "Open Access Same-Time Information System" or "OASIS").[214]

Order No. 888 also addressed problems created by "stranded costs," i.e., an electric utility's “sunk” plant and other costs that it cannot recoup when customers, who previously took bundled service from the utility, take advantage of open-access transmission to purchase cheaper power from other suppliers. Order No. 888 provided utilities an opportunity to recover such costs from a former customer that purchased its power requirements from the utility, but only if (a) the customer uses the former utility's transmission system to reach the new supplier, and (b) the utility shows a "reasonable expectation" that it would have continued to serve that customer beyond the end of its contract term. With respect to costs stranded where retail customers are able to find new suppliers as a result of state retail unbundling, FERC recognized the primacy of state jurisdiction, and therefore took the position that it would serve as a forum for cost recovery only if a state regulator lacked authority to do so and the departing customer uses a FERC transmission tariff to reach its new supplier.[215]

During the course of its rulemaking, FERC addressed several issues concerning its jurisdiction over transmission of electric energy in light of the Act's provisions giving the States jurisdiction over local distribution and retail sales of electric energy. Among those issues was whether federal authority extended to the interstate transmission component of a public utility's sale of power to its retail customers. As FERC recognized, a growing number of States have permitted or required utilities that provide retail service to unbundle their services so that customers can purchase power from sources other than their historical suppliers. Such unbundling, in turn, required FERC to determine which transmission facilities and services would be subject to the nondiscriminatory tariffs of Order No. 888. FERC resolved that jurisdictional question as follows:

> [W]e believe that when transmission is sold at retail as part and parcel of the delivered product called electric energy, the transaction is a sale of electric energy at retail. Under the FPA, the Commission's (FERC’s) jurisdiction over sales of electric energy extends only to wholesale sales. However, when a retail transaction is broken into two products that are sold separately (perhaps by two different suppliers: an electric energy supplier and a transmission supplier), we believe the jurisdictional lines change. In this situation, the state clearly retains jurisdiction over the sale of the power. However, the unbundled transmission service involves only the

[214] See Order No. 888, p. 31,036 at 31,635-36.

[215] Order No. 888-A, p. 31,048 at 30,346.

> provision of "transmission in interstate commerce" which, under the FPA, is exclusively within the jurisdiction of the Commission.[216]

Given FERC's jurisdiction over unbundled transmission, the agency further distinguished between wholesale and retail transactions. In the wholesale situation, FERC asserted exclusive jurisdiction over the rates, terms, and conditions of all unbundled transmission service and the facilities used to provide the transmission, regardless of whether those facilities are labeled "transmission," "distribution" or "local distribution."[217] Order No. 888 thus requires public utilities offering such transmission to file transmission rate schedules with FERC that comply with its open-access rule, and provides that a share of the cost of transmission assets previously included in retail rate base will now be included in rate base subject to FERC's exclusive jurisdiction.

In the retail situation, however, FERC recognized both the States' continuing jurisdiction under Section 201 over "facilities used in local distribution," and the absence of any bright line to distinguish those facilities from interstate transmission facilities. FERC, therefore, adopted a seven factor jurisdictional test, based on the function and technical characteristics of the facilities, to distinguish between transmission facilities subject to FERC jurisdiction and local distribution facilities subject to state jurisdiction.[218] FERC stated that it would defer to state recommendations in such matters, in-

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[216] Order No. 888, p. 31,036 at 31,781.

[217] Id.

[218] Order No. 888, p. 31,036 at 31,981. FERC's seven factor test involves evaluating on a case-by-case basis whether the activities of the facilities in question correspond with seven specific indicators of local distribution:

(1) Local distribution facilities are normally in close proximity to retail customers.
(2) Local distribution facilities are primarily radial in character.
(3) Power flows into local distribution systems; it rarely, if ever, flows out.
(4) When power enters a local distribution system, it is not transported on to some other market.
(5) Power entering a local distribution system is consumed in a comparatively restricted geographical area.
(6) Meters are based at the transmission/local distribution interface to measure flows into the local distribution system.
(7) Local distribution systems will be of reduced voltage.

cluding where to draw the jurisdictional line between transmission and local distribution under FERC's test. But in short, under Order 888, when a public utility is engaged in wholesale transmission, FERC has jurisdiction regardless of the nature of the facility; but when the public utility is engaged in unbundled retail transmission, the facts and circumstances will determine whether the facilities are subject to FERC or state jurisdiction.

FERC further clarified several other aspects of its exercise of jurisdiction over unbundled transmission for retail sale. First, FERC emphasized that in exercising jurisdiction over the rates, terms, and conditions of the transmission component of unbundled retail transactions, it was not asserting authority either to order the unbundling of retail transactions or to order retail transmission to an ultimate consumer. Rather, its jurisdiction attaches only if retail transmission has been unbundled from the retail sale, either voluntarily by the utility or as a result of a state-ordered retail program. Second, FERC clarified that its jurisdiction over the rates, terms, and conditions of unbundled retail transmission would not affect matters traditionally left to the States, "including authority to regulate the vast majority of generation asset costs, the siting of generation and transmission facilities, and decisions regarding retail service territories."[219]

C. Independent System Operators and Regional Transmission Organizations

After Order No. 888 there was significant reorganization, or restructuring, within the electric utility industry, consisting of increasing divestiture of generation plants by traditional electric utilities, a significant increase in the number of mergers among traditional electric utilities and among electric utilities and gas pipeline companies, large increases in the number of power marketers and independent generation facility developers entering the marketplace, as well as the establishment of independent systems operators. This activity included the development in many states of retail competition in the early to mid-1990s. While customers would choose their supplier, the local distribution utility would still handle the delivery of electricity. Retail competition was expected to result in lower retail prices, innovative services and pricing options. It also was expected to shift the risks of assuring adequate new generation construction from ratepayers to competitive market providers. By 2007, 16 states had restructured retail electric service and allowed competitive suppliers to provide service to some, if not all, retail customers at prices set in the market.

Most restructured states required the local utility to continue to offer service under regulated "provider of last resort" (POLR) rates for all retail customers who did not switch suppliers or who lost

[219] *Transmission Access Policy Study Group*, 225 F.3d at 690 - 696.

or discontinued competitive service. These POLR rates were typically fixed for extended periods of time. In many of these states, vertically integrated utilities divested or transferred their generation assets as part of restructuring plans. As a result, in these states the retail load serving utilities obtain electricity from wholesale markets to meet the needs of their retail customers, including POLR obligations.

In Order No. 888, FERC generally required each electric utility to file tariffs for open access transmission services to remedy undue discrimination in access to their monopoly-owned transmission wires. Under the Order, open access transmission tariffs were to contain at least equivalent terms and conditions for non-discriminatory service to those set out in a FERC prescribed pro forma tariff. It also encouraged the formation of independent system operators (ISOs) to administer transmission services and new markets for wholesale electricity transactions. These ISOs were to adopt transmission (and ancillary services) pricing policies to promote the efficient use of, and investment in, generation, transmission, and consumption.

Traditional transmission pricing recovers the fixed costs of transmission facilities. Under the historical ratemaking model, an electric utility company's native load customers have been held responsible for the costs of its transmission facilities. Transmission facilities are accounted for on an embedded or average cost basis. That is, when an electric utility undertakes a capital investment in new transmission facilities, the costs are generally rolled into the utility's rate base and averaged within the company's customer classes. Generation costs have also been averaged across an electric utility company's native load customers.

An electric utility company's native load consists of the residential, commercial, and industrial customers located within that company's service territory. When a third party such as a non-utility generator uses an electric utility company's transmission system, i.e., "wheels" power through that system, it pays a FERC-regulated wholesale transmission charge. Such monies accumulated from third-party wheeling are used to reduce the fixed costs of the transmission system, effectively reducing the cost burden otherwise borne by a company's native load.

As the next step toward creating a more competitive electricity marketplace, Order No. 888 encouraged - but did not require - the development of multi-utility regional transmission organizations (RTOs). The concern was that the segmentation of the transmission grid among different utilities, even if each had functionally unbundled transmission, contributed to inefficiencies that impeded free competition in the market for electric power. Combining the different segments and placing control of the grid in one entity - an RTO - was expected to overcome these inefficiencies and promote competition.[220] And operating or running the RTO through an independent system operator (ISO) was considered the best course of action.[221] As intended by FERC, an ISO would assume operational control - but not ownership - of the transmission facilities owned by its member utilities, thereby "separat[ing] operation of the transmission grid and access to it from economic interests in generation."[222] The ISO would then provide open access to the regional transmission system to all electricity generators at rates established in "a single, unbundled, grid-wide tariff that applies to all eligible users in a non-discriminatory manner."[223] FERC called this type of separation of generation and transmission "operational unbundling," a step beyond "functional unbundling." Although several parties to the 1996 rulemaking had requested that FERC require "operational unbundling" or even divestiture of transmission assets, it was FERC's considered judgment that "the less intrusive functional unbundling approach ... is all that we must require at this time."[224]

1. Order No. 2000

But by 1999, FERC's confidence in functional unbundling's remedial properties had faded. In its view, inefficiencies within the transmission grid and the ability for transmission owners to discriminate in their own favor remained obstacles to legitimate competition in the wholesale electricity

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[220] Order No. 888 at 31,730-32; see also *Public Util. Dist. No. 1 of Snohomish County v. FERC*, 272 F.3d 607, 610-11 (D.C.Cir.2001).

[221] By assuming operational control but not ownership of the transmission facilities, ISOs (which manage RTOs) would separate "operation of the transmission grid and access to it from economic interests in generation [,]"and promote efficiency by taking advantage of economies of scale in segmentation and control of facilities. FERC encouraged "all transmission-owning entities in the Nation, including non-public entities [e.g., governmental entities]," to voluntarily place their transmission facilities under the control of RTOs, some of which would be managed in turn by ISOs. RTOs are given greater regulatory flexibility by FERC, provided that they (inter alia): are regional in scope, have exclusive operational control over all transmission facilities within their control, and have sole authority to approve or deny requests for transmission service.

[222] Order No. 888 at 31,654; see also id. at 31,730-32.

[223] Id. at 31,731; see also *California Indep. Sys. Operator Corp.*, at 397.

[224] Id. at 31,655.

market. FERC nevertheless believed that these issues could be remedied through independent transmission organizations, and promulgated and adopted Oder No. 2000 in an effort to formalize the establishment of RTOs, explaining that "better regional coordination in areas such as maintenance of transmission and generation systems and transmission planning and operation" was necessary to address regional reliability concerns and to foster regional competition.[225] FERC concluded that RTOs would: "(1) improve efficiencies in transmission grid management; (2) impose grid reliability; (3) remove remaining opportunities for discriminatory transmission practices; (4) improve market performance; and (5) facilitate lighter handed regulation." To further encourage RTO development, FERC directed transmission-owning utilities either to participate in an RTO or to explain their refusal to do so.[226] Importantly, though, utilities were still not required to join RTOs under Order No.2000 - participation remained voluntary.

For those utilities opting to join an RTO, Order No. 2000 retained a flexible approach, allowing the RTOs to employ a variety of ownership and operational structures, so long as the RTO established that it had certain required characteristics and functional capabilities. FERC required, inter alia, that an RTO be regional in scope, “have operational authority for all transmission facilities under its control,” “be the only provider of transmission service over the facilities under its control,” and “have the sole authority to receive, evaluate, and approve or deny all requests for transmission service,” Thus, whatever its structure, once a utility made the decision to surrender operational control of its transmission facilities to an RTO, any transmissions across those facilities were subject to the control of that RTO.[227] An ISO conducts the transmission services and ancillary services for all users of such a system, replacing the conduct of such services by the system owners – that is, the integrated electric utilities whose market power FERC was attempting to control by encouraging the creation and operation of the ISOs. In order to accomplish that purpose, FERC deemed it crucial that an ISO be independent of the market participants so that decisions of policy, operation, and dispute resolution be free of the discriminatory impetus inherent in the old system.[228] In regions with RTOs,

[225] See Regional Transmission Organizations, Order No.2000, FERC Stats. & Regs. p. 31,089, 30,999 (1999) (Order No.2000) (codified at 18 C.F.R. s. 35.34) (citing “Staff Report to FERC on the Causes of Wholesale Electric Pricing Abnormalities in the Midwest During June 1998,” at 5-8 (Sept. 22, 1998)).

[226] *Public Util. Dist. No. 1*, 272 F.3d at 612.

[227] 18 C.F.R. s. 35.34(j)(2).

[228] Order No. 888 at 31,731.

wholesale electricity can be bought and sold through the use of negotiated bilateral contracts, through "standard commercial products" available in all regions, and through various products offered by the organized exchange market. For bilateral contracts, the contract can be individually negotiated and have terms and conditions unique to a single transaction.

Order No. 888 and Order No. 2000 delegated most transmission grid management responsibilities to independent system operators. FERC directed each ISO to "administer its own tariff and employ a transmission pricing system that will promote efficient use and expansion of transmission and generation facilities, "provided of course that such tariffs are "just and reasonable." ISOs usually post available transmission capacity schedules on an electronic bulletin board and bidding system. This schedule forecasts transmission availability well into the future, and buyers reserve the space they need hours, months, or years before the scheduled power generation occurs. Capacity reserved with ample notice generally carries a lower price than short-notice reservations. Ultimately, FERC leaves it to ISOs "to reform transmission pricing, and in return [FERC] propose[s] to allow [ISOs] greater flexibility in designing pricing proposals."

FERC also delegated to ISOs "sole authority for the evaluation and approval of all requests for transmission service including requests for new interconnections." Three years later, after recognizing that the interconnection process was characterized by delays, FERC issued a corrective order. To reduce opportunities for discrimination, Order No. 2003 established an optional standard interconnection agreement and procedures.

VI. Market Based Tariffs

Competition in the wholesale electric markets has been the foundation for federal energy policy for the past 30 years, and has guided much of FERC's work over that period. Competition policy is not "deregulation," for the simple reason that FERC has never stopped regulating wholesale power sales or the transmission of electricity. Competition policy relies on both competitive forces and regulation and it seeks the best possible mixture of the two. Practically speaking, it requires the establishment of clear and enforceable rules that allow competitive energy markets to benefit consumers and market competitors alike.

Until the 1990s, as discussed, FERC reviewed electricity rates that were cost-based. The primary factor in setting the rate was the cost of producing and transmitting the electricity. Power suppliers proposed rates by adding up their costs and accounting for an expected rate of return. FERC reviewed and approved tariffs that contained detailed breakdowns of costs and specified rates of return, or agreements between buyers and sellers were reached through privately negotiated wholesale power contracts.[229] Electric utilities were also required to give a thorough explanation of "how the proposed rate or charge was derived."[230] These rate schedules had to be filed at least 60 days before the utility could charge the requested rate, and the rate could be implemented only after FERC approved it.[231] After a rate was approved, a utility could charge only the filed rate until a request to change the rate was submitted and approved by FERC.[232]

The terms and conditions of service were set forth within the "tariffs," which are essentially offers to sell on specified terms, filed with FERC and subject to modification or disapproval by it. Once a tariff was filed and until it was amended, modified, superseded, or disapproved, the carrier could not deviate from its terms. A tariff was, and remains, a set of terms created and filed unilaterally by an electric utility. Customers do not "agree" to these terms, though they are binding unless the federal agency with which they have been filed disapproves them.[233] No private agreement can displace a tariff's terms. The tariff is an offer that the customer accepts by using the product. The terms have legal effect; indeed, by virtue of federal law a tariff is more conclusive than a contract and is said to have the status of a regulation, though a tariff also may be enforced through suit just as a contract may be enforced. Tariffs have been referred to as a species of contract.[234] Tariffs differ from private contracts only to the extent that they are not subject to alteration one customer (or one clause) at a

[229] See 18 C.F.R. s. 35.1(a) (requiring utilities to file "rate schedules"); 18 C.F.R. s. 35.2(b) (defining what information must be included in a "rate schedule"); 18 C.F.R. s. 35.13(h)(22) (requiring utilities to state their expected rate of return).

[230] 18 C.F.R. s. 35.12(b)(2)(i).

[231] See 18 C.F.R. secs. 35.2(e), 35.3(a).

[232] 16 U.S.C. s. 824d(d); 18 C.F.R. s. 35.13.

[233] See, e.g., *AT&T v. Central Office Telephone, Inc.,* 524 U.S. 214 (1998); *Cahnmann v. Sprint Corp.,* 133 F.3d 484 (7th Cir.1998).

[234] See, e.g., *Arsberry v. Illinois*, 244 F.3d 558, 562 (7th Cir.2001); *Atlantic & Gulf Stevedores, Inc. v. Alter Co.*, 617 F.2d 397, 401 n. 16 (5th Cir.1980); *Penn Central Co. v. General Mills, Inc.*, 439 F.2d 1338, 1340 (8th Cir.1971).

time or to nullification by a court on grounds such as unconscionability. Instead a tariff must be enforced as written unless the regulatory agency intervenes. A tariff is a take-it-or-leave-it proposition. But as discussed earlier, the FPA also "departed from the scheme of purely tariff-based regulation and acknowledged that contracts between commercial buyers and sellers could be used in ratesetting."[235] Like tariffs, contracts must be filed with FERC before they take effect.[236]

The FPA requires all wholesale electricity rates to be "just and reasonable." So when an electric utility filed a new rate with FERC, through a change to its tariff or a new contract, FERC could suspend the rate for up to five months while it investigates whether the rate is just and reasonable. FERC could also, however, decline to investigate and permit the rate to go into effect - which does not equal a determination that the rate is "just and reasonable."[237] After a rate went into effect, whether or not FERC determined it to be just and reasonable when filed, it could conclude, in response to a complaint or on its own motion, that the rate is not just and reasonable and replace it with a lawful rate.[238] The statutory requirement that rates be "just and reasonable" cannot be precisely defined, though, and FERC was and is not bound to any one ratemaking formula.[239] Nevertheless, FERC had to choose a method that entails an appropriate "balancing of the investor and the consumer interests."[240] FERC had traditionally reviewed and set tariff rates under the "cost-of-service" method, which ensured that a seller of electricity recovers its costs plus a rate of return sufficient to attract necessary capital.[241]

[235] *Verizon Communications Inc.,* 535 U. S. at 479.

[236] 16 U. S. C. s. 824d(c), (d).

[237] See 18 CFR s. 35.4 (2007).

[238] 16 U. S. C. s. 824e(a).

[239] See *Mobil Oil Exploration & Producing Southeast, Inc.* v. *United Distribution Cos.*, 498 U. S. 211, 224 (1991); *Permian Basin*, *supra*, at 776 - 777.

[240] *FPC* v. *Hope Natural Gas Co.*, 320 U. S. at 603.

[241] See J. McGrew, "Federal Energy Regulatory Commission," 152, 160 - 161 (2003).

In short, the FPA required that all rates for the transmission and sale of wholesale electricity be filed with FERC and published for public review. Bi-lateral contracts for the sale of electric power were reviewed according to the *Mobile/Sierra* doctrine. With a fixed rate tariff, the review process was relatively straightforward. A wholesaler would file a rate, which would become the legal rate unless challenged. If FERC determined that the rate was not "just and reasonable" after a challenge, then it would order refunds.

As barriers to entry in the generation sector declined, however, a competitive wholesale market for the supply of electric energy began to emerge. In response to that development, FERC began considering and approving market-based rates, departing from its historical policy of basing rates upon the cost of providing service plus a fair return on invested capital, and approving market-based tariffs for wholesale electric energy sales because "[i]n competitive markets, FERC may rely upon market-based prices in lieu of cost-of-service regulation to assure a just and reasonable result," and that "[i]n a competitive market, where neither buyer nor seller has significant market power, it is rational to assume that the terms of their voluntary exchange are reasonable."[242]

So FERC began to approve applications to sell electric energy at market-based rates only if the seller and its affiliates did not have, or had adequately mitigated, market power in the generation and transmission of such energy, and could not erect other barriers to entry by potential competitors (FERC defines market power as a seller's ability to "significantly influence price in the market by withholding service and excluding competitors for a significant period of time).[243] FERC permitted the filing of "umbrella" tariffs for a broad range of transactions. These generally applicable umbrella tariffs set out the general rates, terms, and conditions of service, leaving details such as the amount and duration of service and the precise rate level to vary with each transaction. Umbrella tariffs "[gave] the selling utility the flexibility to respond to market opportunities while satisfying its obligation to have its rate on file. . . . [They were intended to] retain maximum flexibility in transacting business in an evolving, increasingly competitive generation market."[244] FERC's review was designed

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[242] (quoting *Tejas Power Corp. v. FERC*, 908 F.2d 998, 1004 (D.C. Cir. 1990)); see *Louisiana Energy & Power Auth. v. FERC,* 141 F.3d 364, 365-366 (D.C. Cir. 1998). See note 233, Infra.

[243] *Public Utilities Commission of the State of California v. Federal Energy Regulatory Commission,* 254 F.3d 250 (D.C. Cir. 2001).

[244] See Prior Notice and Filing Requirements Under Part II of the Federal Power Act, 64 FERC p. 61,139, at pp. 61,982-83 (1993).

to ensure that sellers could not exercise market power and thus that rates charged were just and reasonable.[245] In considering FERC's tariff-approving authority, the courts emphasized "that the just and reasonable standard does not compel the Commission to use any single pricing formula...."[246] The courts have recognized that the "just and reasonable" requirement accords FERC "broad rate-making authority."[247]

In New England, for instance, before ISO New England became an RTO, the New England Power Pool (NEPOOL) had assumed responsibility for all aspects of the day-today operation of the region's bulk power system. Formed in 1971, NEPOOL was responsible for "assur[ing] that the bulk electric power supply of the New England region [was] provided reliably and economically through central dispatch of virtually all of the generation and transmission facilities in New England as a single control area." In 1998 NEPOOL proposed, and FERC ultimately approved, comprehensive market reforms including a shift of the New England wholesale power market from cost-based regulated prices to market pricing, and the creation of ISO-New England (ISO-NE), a private, non-profit entity to administer New England energy markets and operate the region's bulk power transmission system.[248] ISO-NE was authorized to begin operation as an RTO effective February 1, 2005.

Now, prices in the restructured market are governed by rules developed by the Power Pool (the "Market Rules") and filed with FERC under section 205 of the Federal Power Act.[249] During normal system operation, ISO-NE uses an incremental pricing scheme, meaning it sets a market-clearing price by working up the range of generators' bids to find the lowest bid available to supply an increment of power beyond the load demanded for the period in question. All suppliers receive the same

[245] See *PJM Interconnection, L.L.C.*, 121 F.E.R.C. p 61,173 (2007).

[246] *Mobil Oil Exploration & Producing Southeast Inc. v. United Distribution Co.*, 498 U.S. 211, 224, (1991) (discussing the "just and reasonable" requirement in the natural gas context).

[247] Id.

[248] See *New England Power Pool,* 83 FERC Par. 61,045 (1998) ("*NEPOOL I*"), 85 FERC Par. 61,379 (1998) ("*NEPOOL II*"), reh'g denied 95 FERC Par. 61,074 (2001) (approving reforms).

[249] 16 U.S.C. s. 824d(d). See also *NEPOOL II,* 85 FERC at 62,459.

price. Under this system generators are employed in order of "economic merit," beginning with least-cost units.[250]

Accordingly, FERC continued to oversee market-based electricity rates by reviewing and approving a variety of documents filed by the wholesale seller of electric power. Each seller had to file a market-based umbrella tariff, which "preauthorizes the seller to engage in market-based sales and puts the public on notice that the seller may do so."[251] FERC approved these market-based tariffs only upon a showing that the seller lacked or had mitigated its market power.[252] The theory was that a seller could not raise its price above the competitive level without losing substantial business to rival sellers unless the seller has market power, and therefore that FERC's determination that a seller lacked market power provided a "strong reason to believe" that sellers would be able to charge only just and reasonable rates.[253]

FERC required each seller to file quarterly reports containing certain required information including the minimum and maximum rate charged and the total amount of power delivered during the quarter. FERC found that this requirement was necessary to ensure that rates will be on file as required by FPA section 205(c)[254] to allow FERC to evaluate the reasonableness of the charges as required by FPA section 205(a)[255] and to allow FERC to continually monitor the seller's ability to exercise market power.[256]

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[250] Id. at 62,459-60, 62,463.

[251] *California v. British Columbia Power Exchange Corp.* ("BC Power Exchange I"), 99 FERC Par. 61,247 (May 31, 2002).

[252] See *La. Energy & Power Auth. v. FERC*, 141 F.3d 364, 365 (D.C.Cir.1998).

[253] See *Elizabethtown Gas Co. v. FERC,* 10 F.3d 866, 871 (D.C.Cir.1993) (discussing the Natural Gas Act).

[254] 16 U.S.C. s. 824d(c).

[255] 16 U.S.C. s. 824d(a).

[256] *BC Power Exchange I*, 99 FERC p 61,247, 2002 WL 32035504, at 12.

FERC also required the filed tariff to describe in detail how the market operated by the seller would function, i.e. "[m]any of the rules governing market operations were originally submitted by …the ISO for information purposes only, but FERC required that these protocols be filed with and approved by [it] as part of the ISO tariffs..."and "[e]ach participant in the ISO markets was required to sign an agreement acknowledging that the tariff filed by either the PX or the ISO would govern all transactions in that market."[257]

Presently, in its review of an application for market-based rate authorization, FERC undertakes an intensive factual evaluation of the relevant product and geographic markets to determine whether, based on an analysis of market concentration during various seasons and load levels, the seller has market power.[258] Market power is defined as a seller's ability to "significantly influence price in the market by withholding service and excluding competitors for a significant period of time."[259] The seller must demonstrate a lack of market power by passing a series of horizontal and vertical market screens. In addition, for sellers in organized markets administered by RTOs or ISOs, FERC establishes market rules to mitigate the exercise of market power, adopts price and bid caps where appropriate, and establishes market monitors to help oversee market behavior and conditions.[260] As a result, and as discussed previously in this section, a wholesale seller can only obtain authorization to sell electric energy at market-based rates if it first establishes that it does not have market power, or that any market power has been adequately mitigated.[261] In the absence of showing a lack of market power, FERC regulates the rates for wholesale sales under cost-of-service rate making, and each new contract must be filed with FERC before commencement of service. After receiving initial FERC approval to sell power under a market based rate tariff, the seller can enter into new power sales contracts and transactions and begin providing service under them without having to first file them with FERC.

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[257] *Am. Elec. Power Serv. Corp. et al.*, 103 FERC Par. 61,345.

[258] See *Market-Based Rates for Wholesale Sales of Elec. Energy, Capacity and Ancillary Servs. by Pub.Utils.*, 119 FERC Par. 61,295, at 62,653 (2007).

[259] *Citizens Power & Light Corp.*, 48 F.E.R.C. Par. 61,210, at 61,777 (1989).

[260] See *Market-Based Rates*, 119 FERC. p 61,295, at 62,653.

[261] See *California ex rel . Lockyer v. FERC*, 383 F.3d 1006, 1009 (9th Cir. 2004).

This appears to run contrary to the previously discussed filed rate doctrine, under which the only lawful rate is that reflected in the tariff on file when the service is performed.[262] Originating in the Supreme Court's cases interpreting the Interstate Commerce Act and subsequently extended "across the spectrum" of regulated utilities, the doctrine "forbids a regulated entity to charge rates for its services other than those properly filed with the appropriate federal regulatory authority." A corollary is the rule against retroactive ratemaking, which the Supreme Court has described in the context of the Natural Gas Act as "prevent[ing] [FERC] itself from imposing a rate increase for gas already sold."[263] The rules serve the dual purposes of "ensur[ing] rate predictability" for purchasers of regulated electricity and promoting equity among customers by "preventing discriminatory pricing."[264]

But the filed rate doctrine and bar on retroactive ratemaking are satisfied, in keeping with their functions, "when parties have notice that a rate is tentative and may be later adjusted with retroactive effect, or where they have agreed to make a rate effective retroactively."[265] Notice to affected parties "changes what would be purely retroactive ratemaking into a functionally prospective process by placing the relevant audience on notice at the outset that the rates being promulgated are provisional only and subject to later revision."[266] One very practical application of this principle is the acceptability of tariffs with a rate formula, under which rates may constantly change, as long as they do so consistently with the formula, without prior notice to FERC or the public, and are thus not precisely knowable at the time of sale.[267]

[262] See *Arkansas La. Gas Co. v. Hall*, 453 U.S. 571, 577-78 (1981).

[263] *Arkansas Louisiana,* 453 U.S. at 578. Court applies "interchangeably" judicial interpretations of provisions from the Natural Gas Act to their "substantially identical" counterparts in the Federal Power Act.

[264] *Consolidated Edison,* 347 F.3d at 969-70.

[265] *Consolidated Edison*, 347 F.3d at 969.

[266] *Columbia Gas,* 895 F.2d at 797. See also Exxon Co., USA v. FERC, 182 F.3d 30, 49 (D.C.Cir.1999).

[267] Thus, " '[w]hen the Commission [FERC] accepts a formula rate as a filed rate, it grants waiver of the filing and notice requirements of the utility's rates, then, which can change repeatedly, without notice to the Commission [FERC], provided those changes are consistent with the formula.' “As further explained, because "the formula itself is the rate, not the particular components of the for-

To ensure that market-based rates remain just and reasonable after their initial authorization, FERC imposes ongoing reporting requirements for market transactions. For each contract subject to FERC's jurisdiction, sellers are required to report the buyer's and seller's name, a description of the service, the delivery point for the service, the price, the quantities to be served or purchased, the contract's duration, and any other attributes of the product being purchased or sold that contribute to its market value. The reporting requirement provides a means for FERC and the public to identify pricing trends or discriminatory patterns that might suggest the exercise of market power. "[A]fter-the-fact reporting allows the market to operate initially without regulatory intrusion," avoiding the costs and practical difficulties that would be associated with prior review of a large number of transactions, many of which are of short duration.[268] At the same time, the reporting requirement provides FERC with information with which it can oversee the rates being charged, and it places sellers on notice that their market-based rate authority will be subject to continuing review and, if necessary, to remedial action, including the possible revocation of that authorization. Upon finding a tariff violation, FERC may take retroactive action, including ordering the disgorgement of unjust profits.[269]

In summary, FERC over the past 25 years has begun to permit sellers of wholesale electricity to file "market-based" tariffs. These tariffs, instead of setting forth rate schedules or rate-fixing contracts, simply state that the seller will enter into freely negotiated contracts with purchasers. FERC will grant approval of a market-based tariff only if a utility demonstrates that it lacks or has adequately mitigated market power, lacks the capacity to erect other barriers to entry, and has avoided giving preferences to its affiliates. In addition to the initial authorization of a market-based tariff, FERC imposes ongoing reporting requirements. A seller must file quarterly reports summarizing the con-

mula, ... periodic adjustments made in accordance with the Commission [FERC] approved formula do not constitute changes in the rate itself and accordingly do not require [section] 205 filing." (Citations omitted). , *Public Utilities Commission of the State of California,* 254 F.3d at 254.

[268] *B.C. Power*, 99 FERC p. 61,247, at 62,065.

[269] British Columbia Power Exch. Corp., 100 F.E.R.C. p 61,295, at 62,334 (2002); see *Lockyer*, 383 F.3d at 1013, 1015-1016.

tracts that it has entered into, even extremely short-term contracts. It must also demonstrate every four months that it still lacks or has adequately mitigated market power.[270]

The Final Rule on *Market-Based Rates For Wholesale Sales of Electric Energy, Capacity And Ancillary Services By Public Utilities*, effective September 18, 2007, offers greater detail regarding FERC's policies applicable to electric market-based rate authorization.[271]

VII. Shifting Regulatory Oversight

As with other, once fully regulated industries, legislators and regulators have over the last 25 years sought to introduce a greater measure of competition into the electric power industry. In the case of electric power, this has been achieved not by encouraging duplication of intercity transmission or local distribution networks - -as is occurring in the telephone industry--but primarily by regulatory changes. These include imposing obligations on facilities' owners to carry power for other suppliers ("wheeling"), encouraging customers to choose among competing suppliers, and discouraging anti-competitive practices by a variety of means, including restructuring so as to reduce the incentives for anticompetitive behavior.[272]

When combined with federal preemption law, one crucial result of these electric energy market regulatory reforms has been "a massive shift in regulatory jurisdiction from the states to the FERC."[273] A "bright line" (somewhat) exists between state and federal jurisdiction, with wholesale power sales falling on the federal side of the line.[274] FERC's jurisdiction to determine the reasonableness of

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[270] See generally *Market-Based Rates For Wholesale Sales Of Electric Energy, Capacity And Ancillary Services By Public Utilities*, Order No. 697, 72 Fed. Reg. 39904 (2007); *California ex rel. Lockyer* v. *FERC*, 383 F. 3d at 1013; J. McGrew, "Federal Energy Regulatory Commission," at 160 - 167.

[271]Order No. 697.

[272] See generally Energy Information Administration, U.S. Dep't of Energy, "The Changing Structure of the Electric Power Industry: Selected Issues," 1998, DOE/EIA-0562(98) (1998).

[273] *Gentile*, supra, at 373.

[274] *Nantahala Power & Light Co. v. Thornburg*, 476 U.S. 953, 966 (1986) (quoting *Fed. Power Comm'n v. S. Cal. Edison Co.*, 376 U.S. 205, 215 (1964)).

wholesale rates is exclusive.[275] Prior to 1996, vertically-integrated state monopolies would charge public consumers rates regulated by state entities and would purchase power from interstate utilities at rates regulated by FERC. The 1996 FERC reforms opened up local monopolies to competition among suppliers in the wholesale power market, resulting in a sharp increase in wholesale power sales - subject to FERC's exclusive jurisdiction - as electric utilities shopped among suppliers.[276] Additionally, state electric utility restructuring laws resulted in a less active role for state regulators and a more active one for FERC, as the breakup of vertically integrated utilities created the need for many more wholesale transactions.

Despite the legal distinction between 'retail sales' ... and 'wholesale sales,'... essentially there is no functional distinction between generation and transmission facilities dedicated to retail and wholesale transactions.[277] With respect to the distinction between transmission and distribution, the Supreme Court has observed that the test for determining transmission is "technological," i.e. that it depends on the flow of electrons on a set of interconnected wires, but that a 'legal standard" governs the limitation of federal jurisdiction that applies to local distribution.[278] In other words, the local distribution limitation on federal jurisdiction ignores the physical and technical reality that "transmission [and] distribution.., are ... fused and interdependent ....”simply by identifying local distribution as the part of the interconnected wires system that coincides with retail sales.[279] The fact that sellers and buyers are located within a single state, however, and that there may be lines between them located within that same state, does not divest FERC of jurisdiction given the interconnected nature of the electric grid. That is, “interstate commerce” has been interpreted to give the Commission jurisdiction when the transmission system “is interconnected and capable of transmitting [electric] energy across the State boundary, even though the contracting parties and the electrical pathway between them are within one State,” i.e., if the transaction is made over the “interconnected interstate

[275] *Miss. Power & Light Co. v. Mississippi ex rel. Moore*, 487 U.S. 354, 371 (1988).

[276] See *Gentile,* supra, at 373; P*ub. Util. Dist. No. 1 v. Idacorp Inc.*, 379 F.3d 641 (9th Cir. 2004).

[277] See Joskow, “Mixing Regulatory and Antitrust Policies in the Electric Power Industry: The Price Squeeze and Retail Market Competition, in Antitrust and Regulation,” 175-78 (F.M. Fisher ed. 1985).

[278] *Connecticut Light & Power*, 324 U.S. at 531.

[279] Id. at 529.

transmission grid." For example, *in Federal Power Comm' n v. Florida Power & Light* Co., the Court held that a Florida utility was subject to federal jurisdiction because it was interconnected with a Florida utility which was, in turn, interconnected with a Georgia utility.[280]

The upshot of these federal and state innovations in electricity regulation is that state regulators, despite their continued authority over rates charged directly to consumers, have much less actual authority over those rates than they did when *Mobile* and *Sierra* were decided. Local utilities now obtain power largely through wholesale contracts subject to FERC's exclusive regulation, rather than through self-generated and self-transmitted power. As a result, state regulators ordinarily must set retail rates with the wholesale rates as an established cost factor. FERC recognized this dynamic when issuing its reform orders, noting that customers will obtain more power delivered via "unbundled" wholesale transactions - in which the generation and transmission are separately traded rather than provided by an integrated local utility monopoly - making "[t]he exercise of our jurisdiction over rates, terms and conditions of unbundled retail transmission ... more important."[281]

As a result, while the state and federal regulatory reforms of the 1990s did not end regulation of the electric energy industry, they did begin a new regulatory era. Although state regulators formerly took an extremely active role so as to ensure the just and reasonable retail power rates, FERC has exclusive jurisdiction over the wholesale rates that now drive the electric power market and, as a practical matter, largely determine the rates ultimately charged to the public.

[280] 404 U.S. 453 (1972).

[281] Order 888-A, 62 Fed.Reg. at 12,279.