

Federal Regulation of Electric Transmission: From Monopolistic Barrier to Competitive Force

A series of regulatory orders issued by the Federal Energy Regulatory Commission over the past 15 years has transformed the nation's electric system by requiring owners of high-voltage long-distance electric transmission lines to make them available on a nondiscriminatory basis so as to allow access to utility customers by independent, nonutility-owned, lower-priced electricity generators. This information brief explains these orders and how and why they came about.

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Introduction

For most of the 20th century, electricity was delivered to customers by utilities that owned and operated, for the utility's exclusive use, the plants that generated power, the high-voltage transmission lines that transported the power to population centers, and the lower voltage distribution lines that brought electricity to individual customers.

These vertically integrated firms have been regulated at both the state and federal levels as what economists call “natural monopolies.” That term refers to firms whose economic characteristics—including high capital costs, significant economies of scale, and an output so essential to society that price fluctuations do not result in corresponding changes in demand—are such that the cost of their output is minimized not through economic competition, but by being provided by a single supplier.¹ Government regulation of these firms is designed to eliminate monopolistic behavior and provide consumers with the benefits of those lower costs.

Electric transmission is the linchpin of the system, serving literally as the gateway by which developers of electric generation reach customers. Individual utilities that owned transmission lines could limit, deny, or determine the price of, access to lower-priced generators that did not own transmission lines. As a 1989 order by the Federal Energy Regulatory Commission (FERC), the regulator of electric transmission stated, “The most likely route to market power in today's electric utility industry lies through ownership or control of transmission facilities.”²

Beginning in the 1970s, the maturing of the power system, general economic pressures, and advances in the technology of both generation and transmission began to alter the economic environment in which the power system operated. These changes culminated in a series of orders by FERC beginning in the latter half of the 1990s that, in the pursuit of lower electricity rates through increased market competition, removed control of electric transmission from individual utilities and required both interstate and intrastate transmission service to be offered on an equal basis to all generators.

This information brief summarizes these changes and explains how and why they came about.

¹ See Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* (Cambridge: MIT Press, 1993), 11-12; James C. Bonbright et al., *Principles of Public Utility Rates*, 2nd ed. (Arlington: Public Utilities Reports, 1988), chap. 1.

² Citizens Power and Light Corporation, 48 FERC 61,210, at 61,777.

Increased Electricity Rates

During the 1970s, Rising Fuel, Construction, and Capital Costs Increased Electricity Rates

- Fuel costs represented 77 percent of power production expenses for major investor-owned electric utilities in 1970. Prices these generators paid for coal, petroleum, and natural gas inputs during the following decade increased by more than 20 percent annually.³
- The capital-intensive electric power industry depends on debt to finance expansion. The interest rate on high-grade corporate bonds almost doubled from 7.4 percent in 1971 to 14.2 percent in 1981.⁴
- Between 1968 and 1987, higher materials and labor costs and strengthened environmental and safety requirements increased real average construction cost for fossil-fuel plants from \$137 to \$590 per kilowatt. For nuclear plants, the comparable figures were \$161 and \$3,653.⁵
- As a result of these cost pressures, the real retail price of electricity increased by more than 50 percent from 1970 to 1982.⁶

Nonutility Electric Generators Multiplied

Smaller Nonutility Electric Generators Became More Economical and Multiplied

- By the 1970s, the economies of scale realized by building larger fossil fuel plants had been exhausted. For example, units larger than 600 megawatts experienced downtime for maintenance and repairs that was up to five times greater than units with a capacity of 100 megawatts.⁷
- Advancing technology—like gas-fired combined-cycle plants and fluidized bed boilers—allowed smaller plants to exploit economies of scale in operation, while lowering costs by

³ U.S. Department of Energy, Energy Information Administration, *The Changing Structure of the Electric Power Industry, 1970-1991*, March 1993, 36, fn. 63, <ftp://ftp.eia.doe.gov/pub/electricity/elecemas.pdf>; U.S. Department of Energy, Energy Information Administration, *The Changing Structure of the Electric Power Industry, 2000: An Update, Appendix A*, 3, www.eia.gov/cneaf/electricity/chg_stru_update/update2000.pdf.

⁴ *Appendix A*, 3.

⁵ *Changing Structure, 1970-1991*, 39. Nominal prices were deflated by the change in the gross national product implicit price deflator.

⁶ *Ibid.*, Figure 15, 37.

⁷ *Ibid.*, 41.

reducing capital requirements and allowing for shorter construction times. By the 1990s, small gas plants could produce power at 3 cents to 5 cents per kilowatt-hour, compared with 4 cents to 7 cents for coal plants and 9 cents to 15 cents for nuclear plants.⁸

- Public policy supported the growth of small generators. The Public Utility Regulatory Policies Act (PURPA), enacted in 1978 to reduce dependence on fossil fuels, encouraged the development of small producers of alternative fuels and cogeneration by requiring utilities to purchase power from entities under 80 megawatts capacity up to the utility's avoided cost. By 1989, there were 576 of these "qualifying facilities," increasing to more than 1,200 by 1993, with almost 48,000 megawatts of collective capacity.⁹ These generators represented an investment of \$50 billion, and an additional 93,000 megawatts of capacity was under development or construction in 1993.¹⁰
- The Fuel Use Act of 1978 also stimulated the growth of qualifying facilities by prohibiting utilities from constructing new generation plants that used relatively lower-priced natural gas, but allowing qualifying facilities to do so. Although the law was repealed in 1987, it assisted many qualifying facilities to become established in the market.¹¹
- Nonqualifying facilities known as independent power producers—single-asset generators without transmission or distribution facilities—also began to enter the market. Utilities created affiliated power producers to sell power outside their service territory, whose assets were not included in its rate base. Marketers buying and selling power first appeared in 1986. By 1992, the generating capacity added by independent power producers and other nontraditional generators exceeded that added by utilities.¹²

⁸ U.S. Federal Energy Regulatory Commission, *Order No. 888, Promoting Wholesale Competition Through Open Non-Discriminatory Transmission Services by Public Utilities*, Docket No. RM95-8-000, 75 FERC 61,080, Final Rule, issued April 24, 1996, 20, www.ferc.gov/legal/maj-ord-reg/land-docs/order888.asp.

⁹ *Ibid.*, 23.

¹⁰ Alex Radin, "Implications for Utilities of the National Energy Policy Act and Other Developments," *Management Quarterly*, vol. 34, no. 3 (Fall 1993), citing a study by RCG/Hagler, Bailly, Inc., www.questia.com/read/1G1-14836375/implications-for-utilities-of-the-national-energy.

¹¹ Amy Abel, Congressional Research Service, *Electricity Restructuring Background: The Public Utility Regulatory Policies Act of 1978 and the Energy Policy Act of 1992*, 98-419ENR, May 4, 1998, 3, http://wikileaks.org/wiki/CRS:_ELECTRICITY_RESTRUCTURING_BACKGROUND:_THE_PUBLIC_UTILITY_REGULATORY_POLICIES_ACT_OF_1978_AND_THE_ENERGY_POLICY_ACT_OF_1992,_May_4,_1998.

¹² *Order No. 888*, 25.

Barriers to Generation and Transmission Removed

Barriers to Nonutility Generation and Open Transmission Were Removed on a Piecemeal Basis

- While access to transmission continued to impede market access for some nonutility generators, FERC encouraged the development of independent and affiliated power producers by authorizing them to sell at market-based rates resulting from a competitive bidding process for their power sales, rather than traditional cost-of-service rates, on a case-by-case basis.¹³
- Utilities seeking FERC approval of mergers and consolidations began to voluntarily file open access transmission tariffs with FERC in which they promised to provide transmission service to independent generators, as evidence of their mitigating their market power. FERC also required utilities seeking to sell at market-based rates to do so only if they opened their transmission system to competitors.¹⁴
- A major barrier to the development of IPPs was a provision in the Public Utilities Holding Company Act (PUHCA), a 1935 law that prohibited vertically integrated utilities from selling power generated by third parties. PURPA exempted qualifying facilities from PUHCA, but nonqualifying facilities were still subject to its restrictions. Pressure for change began to build, according to one analysis, when “utilities. . . saw opportunities to earn future profits from forming wholesale power subsidiaries.”¹⁵
- The Energy Policy Act of 1992 removed the PUHCA prohibitions by creating a category of producers called “exempt wholesale generators.” The act also gave FERC broad authority to require a utility to provide transmission services to wholesale generators, even if an expansion in transmission capacity was necessary in order to provide those services.¹⁶
- FERC used this authority to promote competition, requiring transmission services to be provided in 12 of the 14 cases it decided through the fall of 1996. It also granted requests for a broader type of transmission service that, it said, “most utilities historically have refused to provide,” namely, “network” service. Network service allows a generator to

¹³ *Electricity Restructuring Background*, 4.

¹⁴ *Order No. 888*, 27-28.

¹⁵ National Regulatory Research Institute, *A Synopsis of the Energy Policy Act of 1992: New Tasks for State Public Utilities Commissions*, NRRI 93-7, June 1993, 38, www.ipu.msu.edu/library/pdfs/nrri/Costello-Energy-Policy-Act-93-7-June-93.pdf.

¹⁶ Pub. L. No. 102-486, 106 Stat. 2776, §§ 721 and 722. One assessment concluded that, prior to the enactment of the act, FERC’s authority to mandate transmission services was so limited that an applicant “had little or no chance of clearing all the legal hurdles necessary to obtain a FERC order” with respect to a utility unwilling to provide transmission. Robert E. Burns, “Legal Impediments to Power Transfers,” in Kevin Kelly, ed., *Non-Technical Impediments to Power Transfers* (National Regulatory Research Institute: Columbus, OH, 1987), quoted in *Synopsis of Energy Policy Act*, 23.

“fully integrate [i.e., balance] load and resources on an instantaneous basis in a manner similar to” that used by the transmission owner, in contrast to the narrower “point-to-point” service that does not include such balancing services.¹⁷

- In a case decided in the spring of 1994, FERC determined that the offering of network service to third-party generators was the key indicator of comparability to the transmission services a utility used itself, and thereafter began applying this “comparability standard” in a variety of contexts.¹⁸
- Nonetheless, FERC recognized that individual decisions on cases brought before it could only achieve so much. Not all generators could afford the time and resources necessary to adjudicate such matters. Accordingly, on March 29, 1995, the commission issued a Notice of Proposed Rulemaking with respect to open access transmission, culminating in Order Nos. 888 and 889, issued on April 24, 1996.

Government Agency Orders Open Up Transmission

FERC Order No. 888 Required Provision of Comparable Transmission Services to Third-Party Generators

With Order No. 888, FERC sought to address its statutory obligations under the Federal Power Act to remedy undue discrimination to ensure that all wholesale buyers and sellers of electric energy obtain nondiscriminatory transmission access. Clearly, the growth of nonutility generators had motivated FERC’s new outlook. As it stated:

The profile of electric power suppliers has expanded to include not just the power supply arms of traditional utilities, but also independent power suppliers, affiliated utility power suppliers selling into territories of other franchise utilities, and power marketers. This offers the promise of an increasingly competitive commodity market in electric power, in which significant benefits to consumers can be achieved. **In the context of an emerging market in generation,** discriminatory practices that once did not constitute undue discrimination must be reviewed to determine whether they are being used to prevent the benefits of competition in generation from being achieved. Here we find conclusively that they are. . . .¹⁹ [Emphasis added]

Order No. 888 required all public utilities owning, controlling, or operating electric transmission facilities used to transport electricity across state borders to file with FERC an Open Access Transmission Tariff (OATT) containing minimum terms and conditions of nondiscriminatory service. Utilities were not required to divest themselves of either transmission or generation

¹⁷ Order No. 888, 33-34.

¹⁸ *American Electric Power Service Corporation*, 67 FERC at 61,490.

¹⁹ Order No. 888, 124.

facilities (although many did), but instead were mandated to implement the “functional unbundling” of wholesale generation and transmission services by establishing separate corporate affiliates to perform those functions. This “functional unbundling” required utilities to:

- take transmission services for wholesale sales and purchases under the same tariff offered to others;
- have separate rates for wholesale generation, transmission, and ancillary services;²⁰
- rely on the same electronic information system that its transportation customers use to obtain information about the transmission system when buying or selling power;²¹ and
- provide any point-to-point or network services that customers requested, even if the utility did not currently provide it.

FERC Order No. 889 Required Use of an Electronic Real-Time Information System Displaying Transmission Information

Order No. 889, issued at the same time as Order No. 888, was designed to ensure that transmission customers have open access to information that allows them to obtain transmission service on a nondiscriminatory basis. The order required transmission-owning entities to:

- provide certain types of information—including rates, availability of capacity, and other data—on an electronic information system open to all; (As FERC stated, “[W]e are opening up the ‘black box’ of utility transmission system information.”²²)
- abide by standards and protocols designed by FERC to ensure that this Open Access Same-Time Information System (OASIS) transmission information is presented uniformly; and
- operate under standards of conduct designed by FERC to ensure the independence of a utility’s employees engaged in transmission operations from those engaged in wholesale interstate purchases and sales of electricity, so that a utility cannot use its access to transmission information to unfairly benefit its own sales.

²⁰ Ancillary services are services necessary to support the transmission of electricity from seller to purchaser while maintaining the reliability of the transmission system in the face of short-term supply disruptions, including the provision of power reserves that can be accessed relatively quickly.

²¹ Order No. 888, 57.

²² U.S. Federal Energy Regulatory Commission, *Order No. 889, Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct*, Docket No. RM95-9-000, 75 FERC 61,078, Final Rule, issued April 24, 1996, xx, www.ferc.gov/legal/maj-ord-reg/land-docs/order889.asp.

FERC Order No. 2000 Strongly Encouraged the Formation of Independent Regional Transmission Organizations to Operate Interstate Transmission Systems

The three years following the issuance of Order No. 888 saw advancements in the competitive nature of electricity markets: the divestiture or imminent sale of more than 10 percent of U.S. generating capacity; an increase in the volume of wholesale electricity trading of more than a 200-fold increase; and the granting by FERC of authority to charge market-based rates to more than 800 entities.²³

However, the ability of the transmission system to accommodate these positive developments and to produce lower energy prices while maintaining system reliability was being questioned. A 1998 study by the North American Electric Reliability Council stated that “the adequacy of the bulk transmission system has been challenged to support the movement of power in unprecedented amounts and in unexpected directions.” The report also expressed concern that new transmission capacity planned by utilities over the next decade was insufficient to support the developing markets. Finally, it noted, “The close coordination of generation and transmission planning is diminishing as vertically integrated utilities divest their generation assets and most new generation is being proposed and developed by independent power producers.”²⁴

A report on reliability delivered to the U.S. Secretary of Energy that same month concluded that “grid reliability depends heavily on system operators who monitor and control the grid in real time,” and that “because bulk power systems are regional in nature, they can and should be operated more reliably and efficiently when coordinated over large geographic areas.”²⁵

Order No. 888 had encouraged the formation of regional Independent System Operators (ISOs) to operate the grid; by 1999, FERC had approved or conditionally approved five such organizations. However, concerns that moves toward more competitive electricity markets may exacerbate reliability problems led the commission to issue a Notice of Proposed Rulemaking in May 1999, in which it stated that it had:

²³ U.S. Federal Energy Regulatory Commission, *Order No. 2000: Regional Transmission Organizations*, Docket No. RM99-2-000, 89 FERC 61,285, Final Rule, issued December 20, 1999, 14-15, www.ferc.gov/legal/major-reg/land-docs/RM99-2A.pdf. The deregulation of retail electric rates that many states (but not Minnesota) pursued in the 1990s contributed to these developments: “In most deregulated states, IOUs [investor-owned utilities] sold off their electric generating facilities as part of the implementation of the retail choice regime, as it was expected that after a short transition period, alternative providers would serve virtually all customers. Instead, retail competition failed to develop as anticipated, so these IOUs must now purchase power from the wholesale market. . . .” American Public Power Association, *Retail Electric Rates in Deregulated and Regulated States: 2009 Update*, March 2010, 1, www.publicpower.org/files/PDFs/RKWfinal2009update.pdf.

²⁴ North American Electric Reliability Council, *Reliability Assessment, 1998-2007*, September 1998, 7, 26, www.nerc.com/files/98ras.pdf. Quoted in *Order No. 2000*, 16-18.

²⁵ Task Force on Electric System Reliability, *Maintaining Reliability in a Competitive U.S. Electricity Industry: Final Report*, September 29, 1998, x-xi, <http://www.nerc.com/docs/docs/pubs/esrfinal.pdf>. Quoted in *Order No. 2000*, 20-21.

reviewed evidence that traditional management of the transmission grid by vertically integrated electric utilities was inadequate to support the efficient and reliable operation that is needed for the continued development of competitive electricity markets, and that continued discrimination in the provision of transmission services by vertically integrated utilities may also be impeding fully competitive electricity markets . . . , depriving the Nation of the benefits of lower prices and enhanced reliability.²⁶

Among the engineering and economic inefficiencies FERC described were many that pointed to a need for a regional solution: stressing of the grid as a result of “an increasingly de-integrated and decentralized competitive power industry,” congestion management, uncertainty associated with transmission planning, and “pancaked” transmission rates, where a separate access charge is assessed every time purchased electricity crosses the boundary of another transmission owner.²⁷

FERC also questioned the effectiveness of its previous orders on this subject, noting that “opportunities for undue discrimination continue to exist that may not be remedied adequately by functional unbundling,” which is “difficult for transmission providers to implement and difficult for the market and [FERC] to monitor and police.”²⁸ It concluded:

The use of standards of conduct is not the best way to correct vertical integration problems [and that a system that uses such standards] . . . to attempt to control behavior that is motivated by economic self-interest . . . will require constant and extensive policing and requires the commission to regulate detailed aspects of internal company policy and communication. . . Their use may be unnecessary in a better structured market where operational control and responsibility for the transmission system is **structurally** separated from the merchant generation function of owners of transmission.²⁹ [Emphasis added]

FERC proposed to achieve such structural separation by placing responsibility for the operation of interstate transmission in the hands of independent Regional Transmission Organizations (RTOs)³⁰ to remedy both the engineering and economic inefficiencies it identified and continued

²⁶ *Order No. 2000*, 2-3. One reason reliability was a concern was that, at the time, the electric power industry largely regulated itself in this respect. It was not until passage of the Energy Policy Act of 2005, in reaction to the 2003 power blackout in northeastern states, that FERC was directed to designate an organization with legal authority to enforce reliability standards that it developed. Stan Mark Kaplan, Congressional Research Service, *Electric Power Transmission: Background and Policy Issues*, R40511, April 14, 2009, 8-9, openers.com/document/R40511/.

²⁷ *Ibid.*, 33-34.

²⁸ *Ibid.*, 65-66.

²⁹ *Ibid.*, 38, 67-68.

³⁰ “ISO and RTO characteristics are similar, and in many cases, FERC uses the terms interchangeably. However, RTOs are intended to cover a large region and, in practice, tend to be multistate.” U.S. Government Accountability Office, *Electric Restructuring: FERC Could Take Additional Steps to Analyze Regional Transmission Organizations’ Benefits and Performance*, GAO-08-987, September 2008, 2, fn. 3, <http://www.gao.gov/new.items/d08987.pdf>.

The Midwest ISO, of which Minnesota is a member, and to which nearly all Minnesota utilities belong, is an RTO.

discriminatory practices with respect to the transmission system. The order did not require utilities to join RTOs, but did require those not doing so to describe impediments to their participation.³¹

Order No. 2000 described the functions an RTO must perform:

(1) ***Tariff administration and design***: Provide nondiscriminatory and uniform access to regional transmission facilities by serving as the sole provider of transmission service and the sole administrator of its own Open Access Transmission Tariff, and the sole authority to evaluate and approve all requests for transmission service, including interconnections of new generators.

(2) ***Congestion management***: Create market mechanisms to address congestion on the system by providing transmission customers with efficient price signals regarding the consequences of their transmission usage decisions.

(3) ***Parallel path flow***: Manage unscheduled transmission flows that occur on adjoining transmission systems when power is transferred on an interconnected grid.

(4) ***Ancillary services***: Decide the minimum amount of each ancillary service a utility must provide and the location where it must be provided; promote the development of a competitive market for ancillary services; ensure that transmission customers have access to real-time balancing services; and is the provider of last resort of ancillary services.

(5) ***Operate OASIS***: Serve as the sole Open Access Same-Time Information System administrator.

(6) ***Market monitoring***: Monitor markets for transmission services, ancillary services, and bulk power, and report to FERC on any market power abuses and market design flaws.

(7) ***Planning and expansion***: Encourage operating and investment actions to prevent and relieve congestion, and coordinate with states and multistate agreements to review and approve new transmission facilities, ensuring a least-cost outcome.

(8) ***Interregional coordination***: Coordinate with neighboring transmission providers to ensure reliability and the provision of transmission services across system boundaries.³²

³¹ *Order No. 2000*, 70, 90, 115.

³² *Ibid.*, 323-497.

FERC Order No. 890 Required Transmission Providers to Use a Uniform Method to Calculate Available Transmission Capacity and to Implement Transparent Regional Transmission Planning Processes

Nearly a decade after issuing its first order aimed at creating fair and equitable access to transmission services by all generators, FERC found that undue discrimination on the part of transmission providers persisted. A crucial function for promoting accessible transportation services is the calculation of Available Transmission Capacity on a system. At the time Order No. 2000 was issued, there was no universally accepted method of calculating this amount, so FERC relied on voluntary industry efforts to develop one, a strategy that was unsuccessful.³³ FERC now ordered transmission providers to arrive at a consistent formula within a year.

Order No. 890 also linked the imperfections of existing transmission planning processes to continuing opportunities for discrimination. The commission noted the decline in transmission investment over the previous decade and the rising congestion costs, increased frequency of denied transmission service requests, and curtailments that resulted. It also recognized that “there is no requirement that the overall transmission planning process be open to customers, competitors, and state commissions[, or] that the key assumptions and data that underlie transmission plans be made available to customers. Taken together, this lack of coordination, openness, and transparency results in opportunities for undue discrimination. . . .”³⁴ It concluded: “We cannot rely on the self-interest of transmission providers to expand the grid in a nondiscriminatory manner,” especially “when doing so reduces the value of their generation or otherwise stimulates new entry or greater competition in their area.”³⁵

Order No. 890 required transmission providers to establish a coordinated, open, and transparent planning process on both a local and regional level under planning principles established by FERC.

FERC Order No. 1000 Required that Transmission Needs Driven by Public Policies, Such as State Renewable Portfolio Standards, be Part of Regional Transmission Planning, and that Fair Transmission Cost Allocation Methods be Adopted

Order No. 1000, issued on July 21, 2011, was designed to address gaps in the regional transmission planning process mandated by Order No. 890:

- For the one-third of the nation’s consumers whose utilities are not members of an RTO or ISO, FERC was concerned that the planning process mandated by Order No. 890 failed to

³³ U.S. Federal Energy Regulatory Commission, *Order No. 890, Preventing Undue Discrimination and Preference in Transmission Service*, Docket Nos. RM05-17-000 and RM05-25-000, Final Rule, Issued February 16, 2007, 14-15, www.ferc.gov/whats-new/comm-meet/2007/021507/E-1.pdf.

³⁴ *Ibid.*, 239.

³⁵ *Ibid.*, 238.

require the evaluation of transmission alternatives at the regional level, allowing individual transmission providers to merely aggregate solutions identified in the local planning process. The order imposed an affirmative obligation on providers to explore bona fide regional alternatives that can address regional needs more efficiently and cost-effectively.³⁶

- The order required the regional transmission planning process to explicitly consider transmission needs driven by public policy requirements established by state or federal laws, such as state Renewable Portfolio Standards.³⁷
- The order mandated better coordination of interregional transmission facilities, including exchanges of planning information and the joint evaluation of transmission facilities located in both regions.³⁸
- FERC also realized that the absence of appropriate methods of allocating the costs of new transmission facilities inhibited their development by: (1) creating risks that costs cannot be recovered from customers; and (2) not providing appropriate incentives to address the “free rider” problem, i.e., since any entity, including one’s competitors, can utilize such facilities, there is little reason to undertake the risks of development.³⁹ Accordingly, the order required transmission providers to develop uniform cost allocation methods for both regional and interregional facilities that are in accord with the following principles:
 - Costs must be allocated to customers that benefit from the facilities in a manner roughly commensurate with the estimated benefits they will realize
 - Costs may not be allocated to those receiving no benefits, except on a voluntary basis
 - Benefit/cost ratio thresholds for deciding whether to develop transmission facilities cannot be set higher than 1.25 without commission approval, so that facilities with significant positive benefits are not excluded
 - Costs may not be allocated to those outside the planning region unless they are accepted voluntarily
 - Transparent methods of determining benefits and identifying beneficiaries of transmission facilities must be developed

³⁶ U.S. Federal Energy Regulatory Commission, *Order No. 1000, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Docket No. RM10-23-000, Final Rule, issued July 21, 2011, 65-66, www.ferc.gov/industries/electric/indus-act/trans-plan.asp.

³⁷ *Ibid.*, 67-68; Renewable Portfolio Standards had been adopted by 29 states at the time the order was issued. FERC, *Renewable Portfolio Standards (RPS) and Goals*, www.ferc.gov/market-oversight/othr-markets/renew/othr-mw-rps.pdf.

³⁸ *Ibid.*, 272.

³⁹ *Ibid.*, 358-359.

- Different allocation methods must be allowed for different facilities, for example, those constructed to improve reliability, to relieve congestion, or as a result of public policy requirements⁴⁰

For more information about electricity, visit the utility regulation area of our website, www.house.mn/hrd.

⁴⁰ Ibid., 440-489.