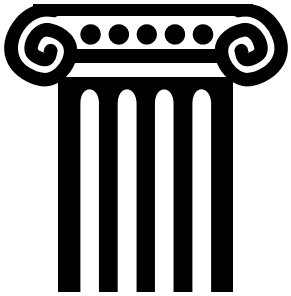

Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch

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Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch

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ABSTRACT

This Article discusses current challenges to siting new electric transmission infrastructure to facilitate the growth of renewable energy. In doing so, this Article focuses on recent legal and policy developments at the federal, state, and regional levels with a specific emphasis on states with significant wind energy potential west of the Mississippi River. In many of these jurisdictions, there has been a strong emphasis on increasing renewable energy resources in recent years, particularly wind power. Each state and regional jurisdiction, however, has taken a different approach to connecting those new renewable resources to the transmission grid that is determined by the jurisdiction's laws governing renewable energy; state and local laws governing the siting of electric transmission lines; the jurisdiction's relationship to a state or regional transmission grid; and the presence of federal lands in the transmission corridor. The overlapping state, regional, and federal policies at play in siting new transmission to facilitate the growth of renewable energy raises unique federalism challenges. By comparing and contrasting the different jurisdictional approaches and outcomes, this Article is able to analyze the extent to which current statutory and regulatory frameworks for transmission are posing barriers to further renewable energy growth and provides suggestions for policy improvements in this area. This Article ultimately concludes that some federal preemption of state siting authority for interstate transmission lines is desirable but may not be politically feasible at the present time. In the alternative, however, states and regional transmission organizations can take advantage of existing regional structures and cost allocation opportunities to better plan for and site the transmission buildout necessary to meet renewable energy goals.

INTRODUCTION

> *"The list of top three [challenges] for wind industry I would say: transmission, transmission and transmission." –Texas Energy Stakeholder*[1]

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[1] Miriam Fischlein, et al., *States of Transmission: Moving Towards Large Scale Wind Power*, ENERGY POLICY (forthcoming 2012).

It is impossible to talk about developing renewable energy resources in the United States without also talking about developing electric transmission infrastructure. More important, the transmission planning strategies that may have worked in the past are no longer effective to integrate new sources of renewable energy into the transmission grid. Transmission lines were historically built to link large stationary power plants to nearby electricity demand centers like cities. For renewable energy, however, state mandates and policies are driving investment in wind, and to a lesser extent solar energy, requiring a need for new transmission lines to link these dispersed resources with electric load centers. Against this backdrop, there is now a complex mix of federal, state, and regional laws, policies, and politics governing both renewable energy goals and transmission planning and siting. These developments have rendered the traditional approach to transmission planning and siting ineffective and in some cases obsolete.

Although members of Congress have introduced bills to create federal renewable energy standards and to create more federal authority over transmission planning to support the growth of renewable energy, most of the action remains at the state level. While there has been significant scholarship on renewable energy siting and development in the United States and how to spur the growth of renewable energy, there has been less emphasis to date on the transmission challenges associated with the growth of renewable energy. This focus is critical, however, because the success of wind and solar development depends on whether it can cost-effectively get to market, and much of that depends on transmission.

This Article considers federal, state, and regional policies governing transmission planning and siting and highlights the challenges and opportunities for further growth. We focus on wind with a much lesser emphasis on solar or geothermal resources because wind resources have grown much more quickly in recent years. There is currently over 40,000 MW of installed wind power, and that scale is beginning to have a demonstrable effect on transmission planning and decisions.[2] While in future years, solar and geothermal energy may be a bigger driver, for now, wind plays a greater role and thus is the central focus. We limit our geographic focus to wind power in states west of the Mississippi River. Because many of these states have strong wind resources, developing wind power is inexorably linked with the development of the transmission infrastructure, often requiring multi-state coordination for siting and building transmission lines and integration with the grid, either through regional transmission organizations or local utilities. While not exhaustive, our analysis seeks to illustrate the different conditions and demands of wind development in the region. Finally, we do not analyze the environmental and aesthetic concerns associated with developing interstate transmission lines. For decades, environmental groups and local landowners have opposed the development of many high-voltage transmission lines because of their potential environmental impacts on scenic and natural areas, endangered species, alleged impacts on human health, and on aesthetic resources. We recognize the importance of these issues in developing interstate transmission but do not expressly consider these specific concerns in this analysis.

Current policies to encourage renewable energy at the federal and state levels will only be successful if accompanied by simultaneous policies to plan, site, build, and operate

[2] American Wind Energy Association, 2010 U.S. Wind Industry Market Update, 2011, http://www.awea.org/learnabout/publications/factsheets/upload/Market-Update-Factsheet-Final_April-2011.pdf

long-distance transmission lines that cross state and regional boundaries. There are significant obstacles, however, associated with creating large-scale systems that span many jurisdictions in light of the current regulatory regime consisting of small, highly devolved decision-making infrastructures. Some of these challenges include (1) transmission planning, siting, and permitting structures that exist primarily at the state level; (2) lack of robust federal authority or regional coordinating authority to plan and site transmission infrastructure when states fail to approve projects as a result of citizen opposition, politics, or cost; and (3) the difficulty in determining which ratepayers should pay, particularly where the transmission lines need to be built in states with lower populations and electricity demand.

Part I first provides a brief background of the electricity transmission system. It explains the different state and regional transmission grids in the United States, the siting challenges faced in attempting to build new transmission infrastructure, as well as the challenges associated with integrating intermittent renewable energy sources into grid dispatch operations. It then explores policies used to develop renewable energy at the state, regional, and national levels, including renewable portfolio standards, renewable energy credits, feed-in tariffs, and other financial incentives. Part II provides detail on specific laws, policies, and structures existing at the federal, state, and regional levels to both encourage renewable energy generally and to site new transmission lines to accommodate growth in renewable energy. With regard to the state-level analysis, this Part considers groups of states west of the Mississippi River as examples of how some states are working alone or together to develop both renewable energy and transmission, and reflects on these actions against the backdrop of various theories of federalism. It also discusses some of the federalism challenges endemic in the current framework of overlapping state, regional, and federal authority governing interstate transmission line planning, siting, and operation. Part III proceeds to discuss some options federal and state policymakers might consider to support transmission infrastructure for large-scale regional renewable resources in light of current system challenges and opportunities. This Part concludes that while federal preemption of state siting authority would eliminate many roadblocks to transmission development, such preemption has its own risks and so far has little political support. As a result, we favor (1) a more limited "process preemption" approach to transmission siting; (2) providing additional encouragement for states to join interstate, regional compacts with permitting authority for transmission; and (3) creating enhanced authority to spread the cost of transmission over larger areas.

I. RENEWABLE ENERGY AND THE ELECTRIC TRANSMISSION GRID

A. The Electric Power Industry and the Transmission Grid

The electricity industry grew from its beginnings in the 1882 New York financial district, with Thomas Edison's steam engines, generators, and direct current wires providing electricity to light shops and restaurants, into a critical backbone infrastructure for the global economy.[3] This country's electricity framework thus grew from small and isolated independent systems to the large and interconnected network of electricity

[3] RICHARD F. HIRSCH, POWER LOSS 12 (1999).

transmission and distribution wires which today connects electricity producers to consumers. The electricity industry can be broken down into four parts: fuel, power generation, high voltage transmission of electricity over long distances, and distribution of the power over lower voltage systems to end users. In the United States, electricity generation uses coal (45%), natural gas (23%), or uranium (20%) to produce most of the 4 billion kilowatt-hours (GWh) of electricity.[4] Hydropower generates 7%, and the remaining renewables just 4% of electricity.[5] Electricity is carried long-distances across the U.S. over 160,000 miles of high voltage transmission lines (115kV or greater), crisscrossing the country and linking into Canada and Mexico.[6] From the high-voltage transmission grid, electricity is then "stepped down" to a lower voltage at a substation for delivery to consumers (residential 38%, commercial 36%, industrial 25%) on low-voltage distribution lines (less than 50kV).[7]

In terms of sales, electricity is a multi-billion dollar business with investor-owned utilities (IOUs) selling 65% of generated electricity, public municipal utilities 16%, rural electric cooperatives 11%, and independent power producers 6%.[8] Electricity is often thought of as a "natural monopoly," and most of the industry remains vertically integrated, whereby utilities own large centralized generation facilities, transmission lines, and distribution lines and cover an exclusive service territory, delivering electricity to customers for sales. Utilities established links between service territories to help ensure a reliable power grid and to facilitate bilateral electricity sales. In order to address the ability of such natural monopolies to charge monopoly rates, states began to regulate IOUs to ensure that they treated customers fairly and that electricity rates remained "reasonable."[9] This "regulator compact" ensured an exclusive service territory to utilities in exchange for reasonable electricity rates for captive customers.

The 1970s oil shocks and increasingly contentious and expensive investments in nuclear power with large cost over-runs brought the traditional utility system under greater public and regulatory scrutiny.[10] The passage of the Public Utility Regulatory Policies Act of 1978 (PURPA) included a provision, Section 210, which allowed independent electricity producers with "qualifying facilities" access to the power grid and electricity sales. This institutional change allowed the first renewable resources (as well as combined heat and energy facilities) access to the grid and began to change the "central station" model. Beginning in the 1990s, some states began to require utilities to submit integrated resource plans to state public utility commissions to justify new infrastructure investments and

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[4] Energy Information Administration, Electricity in the United States, 2011, http://205.254.135.24/energyexplained/index.cfm?page=electricity_in_the_united_states#tab2.

[5] *Id.*

[6] American Society of Civil Engineers, ENERGY http://apps.asce.org/reportcard/2005/page.cfm?id=25, Transmission lines have evolved into three major national networks (power grids): the Eastern, Western, and Texas. These are further subdivided into power pools, which have become the Regional Transmission Organizations (RTO) or Independent System Operators (ISO). "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 inadequate transmission capability."

[7] Energy Information Administration, Electricity Explained, *supra* note ___.

[8] *Id.*

[9] HIRSCH, *supra* note __, at 26.

[10] *Id*. at 66.

include energy efficiency and conservation. These plans would require utilities to estimate their projected electricity demand, generation resources, and investments in new projects for 4, 10 and/or 20-year planning periods on a least cost, "integrated basis," before new projects were approved and integrated into the customer rate base. Twenty-eight states currently require integrated resource plans.[11] These plans required utilities to examine "least cost" resource mixes (including conventional generation as well as renewables, energy efficiency, conservation, new transmission, and improvements to existing facilities),[12] incorporating environmental, land use, as well as economic and reliability factors into resource planning. Most states also delegated authority to state public utility commissions to issue a "Certificate of Need" and a site or route permit to build a new generation facility or transmission line. With regard to transmission lines, this process generally considers how the line would fit with the state's resource planning, the "need" of the line based on demand, a full evaluation of the environmental impacts of the line, and the availability of alternatives.[13] Once a line has obtained a certificate of need (and in some cases a separate route permit), state statutes generally empower the sponsor to exercise eminent domain authority to construct the line if the line is unable to obtain voluntary easements from landowners.[14]

In the early 1990s, the regulated utility industry underwent change in many states with restructuring, which sought to split apart the vertically integrated utility functions of generation, transmission, and distribution of electricity. The desire for an efficient "market-driven" generation system, which supporters promised would bring more efficient decision making and lower costs, spurred this transformation. While restructured market troubles in California and the Northeast prompted a partial re-regulation in some cases, the fundamental nature of the industry had been forever altered. Today, 29 states are still traditionally regulated (with vertically integrated utilities) and the rest are restructured or partially restructured.[15] Regional Transmission Organizations (RTO) and Independent System Operators (ISO), voluntary organizations created by the Federal Energy Regulatory Commission (FERC), manage the grid and regional markets for wholesale power for most of the country's population.

All of these developments have occurred against the backdrop of the physical structure of the transmission grid. In the contiguous United States, there are three separate grids or sub-regions—the Eastern Interconnection, the Western Interconnection, and the Electric Reliability Council of Texas (ERCOT)—yet most of the planning, siting, and approvals of

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[11] Frederik Weston, *Integrated Resource Planning: History and Principles, Regulatory Assistance Project*, 27th National Regulatory Conference, Marshall-Wythe School of Law, Williamsburg, Virginia, May 2009.

[12] PGE, Integrated Resource Plan April 2010, http://www.portlandgeneral.com/our_company/news_issues/current_issues/energy_strategy/docs/irp_issues_in_perspective.pdf.

[13] *See* Michael Dworkin, et al., *Energy Transmission and Storage*, *in* THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 531, 538 (Michael B. Gerrard ed. 2011).

[14] *See, e.g.*, Jim Rossi, *The Trojan Horse of Electric Power Transmission Line Siting Authority*, 39 ENVTL. L. 1015, 1019-22 (2009) (discussing state siting statutes, certificates of need, and eminent domain authority for transmission lines).

[15] Energy Information Administration, 2011, Department of Energy, http://38.96.246.204/cneaf/electricity/page/restructuring/restructure_elect.html.

transmission lines are managed by state-level public utility commissions.[16] Within each sub-region, the electric network is highly interconnected and interdependent but virtually no capability to move electricity between regions exists between these three sub-regions.[17] The North American Electric Reliability Corporation (NERC), a non-governmental organization, works with eight regional entities which subdivide the grid even further to ensure bulk power reliability.[18]

B. Renewable Energy Policy

In the absence of U.S. comprehensive federal policies to reduce greenhouse gas emission and with few federal policies to require renewable energy development, states have taken an active role in developing their own policies to promote renewable energy.[19] Historically, just a small fraction of electricity produced in the U.S. was generated from renewable energy sources. From 1989 to 2004, non-hydro renewable energy generated just 2 to 2.5% of all electricity produced.[20] Most of this electricity was generated from biomass combustion, municipal solid waste, and geothermal energy, with solar and wind comprising a small fraction.[21] After 2004, growth in renewable energy, primarily wind power, increasing at over 12% a year, has meant that by 2007, non-hydro renewable energy accounted for 3% of all electricity nationwide and over 10% in several states.[22]

Thirty-nine states currently have adopted renewable portfolio standards (RPS), alternative energy portfolios, or voluntary goals to spur additional renewable energy development.[23] There is significant state by state variation within the adopted RPS; which policy instruments states choose use and who is held accountable for meeting the binding or non-binding targets varies greatly.[24] Many states have additional policies to promote renewable energy such as Renewable Energy Credits (RECs),[25] feed-in tariffs, tax incentives, and taxes.[26]

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[16] Seth Blumsack, *Measuring the Benefits and Costs of Regional Electric Grid Integration*, 28 ENERGY L.J. 147, 155 (2007). "The United States power grid is made up of three distinct sub-regions: the Eastern and Western Interconnects (roughly demarcated by the Rocky Mountains), and Texas." *Id. See also* Visualizing the U.S. Electric Grid, National Public Radio, (May 1, 2009) http://www.npr.org/templates/story/story.php?storyId=110997398.

[17] Seth Blumsack, *Measuring the Benefits and Costs of Regional Electric Grid Integration*, 28 ENERGY L.J. 147, 155 (2007).

[18] Key Players: Regional Entities, North American Electric Reliability Corporation, http://www.nerc.com/page.php?cid=1|9|119 (last visited Aug. 27, 2011); NERC: About NERC, North American Electric Reliability Corporation, http://www.nerc.com/page.php?cid=1 (last visited Aug. 27, 2011).

[19] Barry Rabe, *States on Steroids: The Intergovernmental Odyssey of American Climate Policy*, 2 REVIEW OF POLICY RESEARCH 25 105-128 (2008).

[20] MIRIAM FISCHLEIN, RENEWABLE ENERGY DEPLOYMENT IN THE ELECTRICITY SECTOR: THREE ESSAYS ON POLICY DESIGN, SCOPE, AND OUTCOMES 5 (Ph.D. Dissertation, University of Minnesota) (2010).

[21] FISCHLEIN, *supra* note __, at 8.

[22] *Id.* at 5.

[23] Pew Center on Global Climate Change, 2011, Renewable and Alternative Energy Portfolio Standards, http://www.pewclimate.org/what_s_being_done/in_the_states/rps.cfm.

[24] FISCHLEIN, *supra* note __, at 2.

[25] *Id.* at 29.

[26] Eric Lipton & Clifford Krauss, *A Gold Rush of Subsidies in the Search for Clean Energy*, N.Y. TIMES, November 11, 2011, http://www.nytimes.com/2011/11/12/business/energy-environment/a-cornucopia-of-help-for-renewable-energy.html?scp=1&sq=renewabe%20energy&st=cse

State RPS usually require that a certain percentage of electricity sales (MWh) or generation capacity (MW) come from renewable electricity programs. States typically require that by 2020 or 2030, 15-30% of electricity sold in the state be produced by a renewable energy source.[27] However, the renewable technologies allowed and electric utilities required to participate in the programs can vary widely. Some states include only investor owned utilities (IOUs) under their RPS (12 states), while others also include rural electric co-operatives or municipal utilities; other states such as Oregon and Michigan make exclusions based on size or sales capacity.[28] Scholars have documented that on average 86% of electricity sales are covered by RPS, but some states cover much less, such as Illinois, which covers only 30% of electricity sales.[29] Which resources are eligible to be counted under an RPS vary too. Some states allow for existing renewable resources to be included, others only count new facilities, some states allow large hydro facilities to be included, while others do not. Some technologies like geothermal power, tidal energy, or even wind power may not be available in certain geographic locations.[30]

Some states allow utilities to purchase RECs to fulfill their statutory obligations and meet their RPS requirements from other states, while others require renewable generation to be in-state.[31] RECs allow utilities to fulfill their statutory obligations, potentially at lower cost, by purchasing the "environmental benefit" of renewable energy out of state. RECs are tradable certificates that create a separate market for the "environmental benefit" of renewable energy. RECs can be sold with the electricity (bundled) or separately (unbundled). Of the states with RPS, 21 allow use of RECs, with use capped in an additional 4 states. Because neighboring or nearby states may have lower cost renewable development, utility-purchased RECs can have a significant impact on renewable energy deployment in neighboring states, and drive the need for additional regional transmission projects.[32] This illustrates why states are not policy or renewable energy islands, and a regional approach to renewable development and transmission planning is important for widespread renewable development.

C. Challenges of Wind Power

Because electricity cannot be easily stored, the generated electricity must match electricity demand. Unlike the traditional forms of energy such as coal or natural gas or other renewable energy sources such as biomass, municipal solid waste, and geothermal energy, wind and solar energies are variable. Wind turbines only produce power when the wind blows; solar panels only produce power when the sun shines.[33] While small amounts

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[27] FISCHLEIN, *supra* note __, at 7.

[28] *Id*. at 21.

[29] *Id*. at 22.

[30] *Id*. at 22.

[31] *Id.* at 29. Tradeable RECs are not permitted in AZ, CA, NV or WI; they are capped in KS, NC, OR, UT, but allowed in CO, CT, DC, DE, HI, MA MD, ME, MI, MN, MO, MT, NH, NJ, NM, OH, PA RI, TX, VT, and WA. Because IA has a capacity goal, and IL and NY require central procurement of renewable energy, these states do not use tradeable RECs. *Id.*

[32] *See infra* notes __ - __ (discussing how California's renewable energy mandates are driving development of wind power and transmissions in other states in the region such as Washington, Oregon, and Utah).

[33] Matthew L. Wald, *New Rules and Old Plants May Strain Summer Energy Supplies* N.Y. TIMES, August 11, 2011 (discussing intermittency problems with wind power),

of wind energy can be integrated into the existing grid, large amounts of wind energy in the system require new approaches to manage and integrate variable wind power on the grid. This challenge is being addressed by providing back up reserves, like natural gas plants, which can quickly ramp up if the wind stops blowing, or developing energy storage systems (e.g. pumped hydro energy storage, large batteries, flywheels, compressed air storage to name a few), or by developing wind power in areas where the wind resource is not correlated, curtailing wind turbines (shutting turbines off when there is too much power on the system), or improving the predictive power of wind models. In the Midwest Independent System Operator service territory, there are ongoing operational experiments aimed at making wind a "dispatchable intermittent resource,"[34] by bidding wind power forecasts into the day-ahead electricity market, and then truing up the estimated amount of wind power 10 minutes before dispatch.

Moreover, as the best wind resources are often located far from electricity demand centers, bringing wind resources to market involves an expansion of the electric transmission grid. In a sense, this is the opposite of traditional power plant siting, where a central power plant was linked to the transmission grid for the purpose of distribution. While the "first generation" of wind was often sited where transmission capacity was available, "second generation" wind development is going to require specially purposed transmission lines connecting areas of high wind resource to the grid. Building these transmission lines will be costly. For example, the transmission system upgrades necessary to integrate planned renewable energy projects in the Western Interconnect are estimated to cost at least $200 billion.[35] Additionally, how these investments are made will shape the ultimate grid architecture and system performance. Different visions of how the grid will evolve range from a "supergrid" constructed with ultra-high voltage wires spanning North America to relying on regional plans to upgrade the grid for specific projects to better connect renewable resources and centers of electricity demand.[36] The ultimate architecture of the grid will shape the future role of renewable energy within the electric system.

II. TRANSMISSION LAW AND POLICY IN THE 21ST CENTURY: BUILDING THE GRID AND ADDING RENEWABLE ENERGY

This Part first explores the extent of the federal government's involvement with renewable energy development and transmission line siting on federal and non-federal lands, and discusses recent Federal Energy Regulatory Commission (FERC) initiatives to promote transmission line projects involving renewable energy. It shows that Congress has given FERC only limited authority over the siting of transmission lines off of federal lands

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http://www.nytimes.com/2011/08/12/business/energy-environment/new-rules-and-old-plants-may-strain-summer-energy-supplies.html?src=recg.

[34] Market Committee, MISO, March 1, 2011, https://www.midwestiso.org/Library/Repository/Meeting%20Material/Stakeholder/MSC/2011/20110301/20110301%20MSC%20Item%2012a%20DIR%20Implementation%20Update.pdf

[35] Jeff St. John, *Tres Amigas Raises Money for US Grid Super-Hub* GREENTECH MEDIA, Nov. 9, 2011, at http://www.greentechmedia.com/articles/read/tres-amigas-raises-money-for-u.s.-grid-super-hub/.

[36] STAN MARK KAPLAN, ELECTRIC POWER TRANSMISSION: BACKGROUND AND POLICY ISSUES, CONGRESSIONAL RESEARCH SERVICE, April 14, 2009, http://fpc.state.gov/documents/organization/122949.pdf at p. 10.

and, for the most part, stakeholders and the courts have thwarted recent efforts by FERC to exercise such authority. This Part then turns to the states, which have been active in setting renewable energy policy in recent years and which currently exercise the bulk of authority over transmission line siting and cost allocation. Because the majority of on-shore wind resource potential in the United States occurs in the Great Plains region and other parts of the western and southwestern United States,[37] this Part focuses on a select group of states west of the Mississippi that have been active in developing wind energy capacity and consumption. Specifically, we focus on the wind energy and transmission siting processes in three key regions: (1) Minnesota, North Dakota, and Iowa in the Midwest; (2) Oregon and California in the West; and (3) Texas. To examine the successes and challenges seen in the various states, we also review recent renewable energy transmission projects found in the selected states and regions. Throughout the state-level discussion, we consider principles of federalism and the difficulty of states acting as their own "laboratories of democracy" in the area of interstate transmission development. Then, after discussing state policies and challenges, this Part provides some additional context for this discussion by looking at a few, select regional entities responsible for operating the transmission grids within some of the selected states.

A. Federal Renewable Energy and Transmission Policy

The American Recovery and Reinvestment Act of 2009 (ARRA) "allocated $4.5 billion to modernize the National's transmission grid," and in particular, to build a smart grid.[38] Congress has also "provided significant funding to support broader multiregional planning efforts extending beyond individual utilities or system operators."[39] More recently, the Obama Administration has created an "Interagency Rapid Response Team for Transmission" (RRTT) to better coordinate the siting of interstate transmission lines to "increase grid reliability, integrate new renewable energy into the grid, and save consumers money."[40] The RRTT announced in October 2011 that it will attempt to expedite the permitting and construction of seven transmission line projects through Arizona, Colorado, Idaho, Minnesota, New Mexico, Nevada, Wyoming, Utah, New Jersey, Pennsylvania, Oregon, and Wisconsin, by attempting to more closely coordinate state and federal review processes.[41] The transmission lines were selected from lists produced through ARRA-funded stakeholder processes.[42]

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[37] 80-Meter Wind Maps and Wind Resource Potential, Wind Powering America, http://www.windpoweringamerica.gov/wind_maps.asp (last visited August 14, 2011).

[38] Debbie Swanson & Meredith M. Jolivert, *DOE Transmission Corridor Designations & FERC Backstop Siting Authority: Has the Energy Policy Act of 2005 Succeeded in Stimulating the Development of New Transmission Facilities?*, 30 ENERGY L.J. 415, 460 (2009).

[39] The Honorable John R. Norris & Jeffery S. Dennis, *Electric Transmission Infrastructure: A Key Piece of the Energy Puzzle*, 25 NAT. RES. & ENV'T 3, 28 (Spring 2011).

[40] *See* Council on Environmental Quality, Interagency Rapid Response Team for Transmission, at http://www.whitehouse.gov/administration/eop/ceq/initiatives/interagency-rapid-response-team-for-transmission.

[41] *Id.* The seven projects, several of which are discussed in this Part are: (1) Cascade Crossing, about 200 miles of high-voltage transmission lines proposed by Portland General Electric from Boardman, Oregon to Salem Oregon; (2) Boardman-Hemingway, a 300-mile, 500-KV line proposed by Idaho Power from Boardman Oregon to Melba Ohio; (3) Gateway West, proposed by Idaho Power and Rocky Mountain Power, for 1,150 miles of new high-voltage lines between Idaho and Wyoming; (4) Transwest Express, a 700-mile,

Despite these efforts to provide federal financial support and streamlined approvals, it is the states that have taken the lead in establishing most renewable energy policies in the United States and are the primary actors with regard to transmission siting. As a result, "the nation's transmission grid is an interconnected patchwork of state-authorized facilities."[43] For the most part, each state manages its own siting procedures for transmission lines with some regional cooperation and limited federal oversight, and then interaction with the RTOs and ISOs, when applicable with regard to grid management. In recent years, Congress has attempted to exercise more authority over transmission to increase grid reliability and accommodate growth in renewable energy, but these efforts have had limited success, as discussed below.

1. Federal Statutes Governing Electricity Transmission Siting

The Federal Power Act of 1935 (FPA) provides the statutory foundation for regulating the business of transmitting and selling electricity across state lines.[44] Congress has since transferred these responsibilities to the Federal Energy Regulatory Commission (FERC).[45] The FPA grants FERC jurisdiction over interstate transmission of electricity and the wholesale sale of electricity in interstate commerce.[46] FERC has no authority to regulate electricity that is generated and consumed intrastate (Texas, for example, does not import or export electricity). Moreover, although the FPA gives FERC jurisdiction over the *transmission* of electricity across state lines, that authority does not extend to the *siting* of transmission lines (either interstate or intrastate), which remains with the purview of the states.[47] The FPA also grants FERC ratemaking authority, and Section 205 of the FPA prohibits "undue preferences or discrimination and requires that any rates, charges, or classifications be 'just and reasonable.'"[48] If a rate is not reasonable, FERC may order a new rate. This statutory framework, although modified in the 1970s, still forms the basis

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600 KV new transmission line to bring new wind generation from Wyoming to Utah and Las Vegas, proposed by Transwest Express LLC; (5) SunZia Transmission, two 500-KV liens starting near Ancho, New Mexico and ending near Coolidge, Arizona, proposed by a consortium of southwest utilities called SunZia; (6) Hampton-Rochester-Lacrosse, a 345-KV line from Hampton, Minnesota to near Alma, Wisconsin, plus two 161-KV lines proposed by the CapX2020 utility group; (7) Susquehanna-Roseland, a 145-mile, 500-KV line from Pennsylvania to New Jersey, proposed by two New Jersey utilities. *See Federal Agencies Select Seven Projects for Fast-Track Transmission Siting Process*, BNA DAILY ENVT. REPORT, 194 DEN A-10 (Oct. 6, 2011), at http://news.bna.com/deln/display/batch_print_display.adp.

[42] *See* Council on Environmental Quality, *supra* note __.

[43] *See Piedmont Environmental Council v. FERC***,** 558 F.3d 304 (4th Cir. 2009), *cert. denied*, 130 S. Ct. 1138 (2010).

[44] *See* New York v. FERC, 535 U.S. 1, 18-20 (2002) (discussing FERC jurisdiction over transmission and wholesale sale of electricity under the FPA); Frederick R. Fucci, *Distributed Generation*, *in* THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 348 (Michael B. Gerrard, ed. 2011).

[45] *Id*.

[46] Michael Dworkin et al., *Energy Transmission and Storage*, *in* THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 531, 535 (Michael B. Gerrard, ed., Section of Environment, Energy, and Resources, American Bar Association, 2011).

[47] *See* Jim Rossi, *The Trojan Horse of Electric Power Transmission Line Siting Authority*, 39 ENVTL. L. 1015, 1017, 1033 (2009).

[48] Frederick R. Fucci, *Distributed Generation*, *in* THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 348 (Michael B. Gerrard, ed., 2011).

for much of the electricity framework and physical and financial investments that remain in place today.[49]

After the FPA, the Public Utility Regulatory Policies Act of 1978 (PURPA) was the next major piece of federal energy legislation. In PURPA, "Congress committed itself to a program designed to subsidize the growth of non-fossil fuel sources of electric power by requiring utilities to buy back the surplus power from alternative generators."[50] This was meant to "reduce dependence on foreign oil, to promote alternative energy sources and energy efficiency, and to diversify the electric power industry."[51] This Act allowed independent electric generators to own and operate generation facilities for the first time. Congress required utilities to buy electricity from these independent generators at the same rate that it would cost the utilities to produce the power, known as the utility's "avoided cost."[52] More recently, the Energy Policy Act of 2005 (EPAct 2005) altered PURPA by "requiring utilities to provide net metering services and other smart metering practices that would allow for more distributed uses of the transmission system," added a "requirement that a utility must provide interconnection services to any customer in that utility's service area," and "repealed the obligation in PURPA that utilities purchase electricity from certain qualifying facilities."[53]

Prior to 1992, any utility that wanted to move electricity across another system had to first obtain approval.[54] In 1992, Congress sought to promote even greater competition at the generator level. Because competition in generation is only possible if non-utility generators have access to the same transmission lines that utilities own, but who also own generators against whom the new class of non-utility generators were supposed to compete, Congress authorized FERC to require that utilities allow open and nondiscriminatory access to the transmission grid as part of the Energy Policy Act of 1992 (EPAct 1992).[55] FERC did so by promulgating Order 888 in 1996, which requires that all transmission utilities that also owned generators to "file open access non-discriminatory transmission tariffs (OATTs) that contain minimum terms and conditions of non-discriminatory service."[56] Non-discriminatory service includes a requirement that all electricity generators connect to the grid for the same price.[57] EPAct 1992 also incentivized renewable energy generation by introducing the Production Tax Credit (PTC).[58] The PTC, paying $0.02 for each kWh produced, has helped increase installed-wind capacity from only 200 MW in 1993 to over 40,000 MW today.[59] Unfortunately, the PTC, which is not permanent and has

[49] Dworkin, et al., *supra* note __, at 535.
[50] Jim Rossi, *The Limits of a National Renewable Portfolio Standard*, 42 CONN. L. REV. 1425, 1427 (2010).
[51] Dworkin, et al., *supra* note __, at 535.
[52] Fucci, *supra* note __, at 349.
[53] Dworkin, et al., *supra* note __, at 536.
[54] Dworkin, et al., *supra* note __, at 535.
[55] Dworkin, et al., *supra* note __, at 542.
[56] Dworkin, et al., *supra* note __, at 542.
[57] Dworkin, et al., *supra* note __, at 542.
[58] 26 U.S.C. § 45. The Production Tax Credit currently pays 2.2¢ per kilowatt hour for generated wind energy. *See* DSIRE: DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, *Production Tax Credit*, http://dsireusa.org/incentives/incentive.cfm?Incentive_Code=US13F (last visited Aug. 24, 2011).
[59] Jeffry S. Hinman, *The Green Economic Recovery: Wind Energy Tax Policy After Financial Crisis and the American Recovery and Reinvestment Tax Act of 2009*, 24 J. ENVTL. L. LITIG. 35, 60 (2009).

repeatedly been allowed to expire, has created a "boom-and-bust cycle of investment" in which projects are rapidly completed before the PTC expiration, unnecessarily driving up prices, followed by a collapse in investment in wind energy infrastructure of 73-93% in the years after the expiration.[60]

The next major piece of legislation in this area was the Energy Policy Act of 2005 (EPAct 2005) which Congress enacted "to promote energy efficiency and a diversity of fuel sources, as well as strengthen the interstate delivery system for energy supplies."[61] The legislation was a direct reaction to the 2003 blackouts in the Northeast and the Midwest,[62] and "Congress sought to strengthen the reliability of the national transmission grid and promote greater regulatory certainty, with the hope that billions of dollars in new transmission investments would occur."[63] EPAct 2005 amended the Federal Power Act (FPA) and as part of those amendments added Section 216, which created a number of policies affecting the siting of electric transmission lines. These included the establishment of national interest electric transmission corridors (NIETCs), federal "backstop" siting authority, a framework for interstate compacts, and encouraging interagency memoranda of understanding. Although many hoped this additional federal authority would have a significant impact on overcoming roadblocks to transmission siting, the actual impact has been extremely limited to date.

NIETCs: EPAct 2005 directs the Department of Energy ("DOE") to identify, if at all, NIETCs as part of an electric transmission congestion study to be conducted every three years.[64] The DOE is directed to establish NIETCs in areas that are experiencing electricity transmission constraints or congestion.[65] NIETC designation allows transmission lines within the NIETC to receive fast-track approvals and also allows FERC to exercise "backstop" siting authority under Section 216 of the FPA and override state barriers to transmission siting.[66] In designating NIETCs, DOE must consult with affected states.[67] Although DOE attempted to designate NIETCs for the first time in 2007 in the Southwest (California and Arizona) and the Mid-Atlantic (New York to Washington D.C.),[68] the U.S. Court of Appeals for the Ninth Circuit vacated those designations in early 2011 for failure to adequately consult the affected states and for failure to adequately consider environmental impacts as required by NEPA.[69] As a result, the NIETC corridors were

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[60] Christopher Riti, *Three Sheets to the Wind: The Renewable Energy Production Tax Credit, Congressional Political Posturing, and an unsustainable Energy Policy*, 27 PACE ENVTL. L. REV. 783, 789, 795 (2010). *See also* Hinman, *supra* note __, at 60.

[61] Debbie Swanstrom & Meredith M. Jolivert, *DOE Transmission Corridor Designations & FERC Backstop Siting Authority: Has the Energy Policy Act of 2005 Succeeded in Stimulating the Development of New Transmission Facilities?*, 30 ENERGY L. J. 415, 422 (2009).

[62] Swanstrom & Jolivert, *supra* note __, at 423.

[63] Swanstrom & Jolivert, *supra* note __ at 423 (internal quotations omitted).

[64] This is mandated by section 1221(a).

[65] 16 U.S.C.A. § 824p(a).

[66] *Ninth Circuit Vacates the Department of Energy Congestion Study and Designation of National Interest Electric Transmission Corridors*, 296 CORPORATE COUNSEL'S MONITOR 19 (Apr. 2011).

[67] *Ninth Circuit Vacates the Department of Energy Congestion Study and Designation of National Interest Electric Transmission Corridors*, 296 CORPORATE COUNSEL'S MONITOR 19 (Apr. 2011).

[68] *See* NIETC webpage: http://nietc.anl.gov/nationalcorridor/index.cfm.l

[69] *California Wilderness Coalition v. DOE*, 631 F.3d 1072 (9th Cir. 2011).

remanded to DOE to begin the designation process over again.[70] Notably, although many states opposed the NIETCs, some states favor them in order to allow easier export of renewable resources to population centers. For instance, in her comments to the U.S. Department of Energy in 2008, Susan Wefald, then a North Dakota Public Service Commissioner, expressed concerns over the impediments to interstate transmission siting, and hoped that the Dakotas would be designated as a NIETC, which would allow for more efficient transmission siting in connection with developing the state's wind resources.[71]

In September 2011, the Obama Administration formulated a plan that would delegate the DOE's authority to designate NIETCs to FERC.[72] This delegation was specifically designed to overcome the Ninth Circuit's ruling discussed above and the Fourth Circuit's ruling discussed below.[73] The proposed delegation would have allowed FERC to conduct reviews of transmission projects at the same time as state authorities, whereas now FERC must wait until state authorities have concluded all reviews before it can begin its process.[74] Some members of Congress immediately opposed this plan, however, on grounds it would re-write the EPAct 2005 by allowing FERC to approve specific projects by designating congestion corridors.[75] After additional widespread criticism from state public utility commissioners and some utilities, the Administration withdrew the proposed plan less than a month after its original proposal.[76]

Backstop Siting Authority: EPAct 2005 also granted FERC eminent domain authority over interstate transmission lines when a transmission developer is not able to site a line at the state level after a year or under certain other conditions, and the line is in a NIETC. Specifically, in order to exercise "backstop" authority, FERC must establish that (1) the state does not have the authority to approve the siting of the line or is unable to consider the benefits of the interstate line in its approval process;[77] (2) the state is unable to site the line because the transmission applicant does not (and will not) sell retail electricity in the

[70] 631 F.3d at 1107.

[71] *See* Susan Wefald, Comm'r, N.D. Pub. Serv. Comm'n, Remarks at the U.S. Dep't of Energy Transmission Congestion Study Workshop (June 18, 2008), available at http://congestion09.anl.gov/documents/docs/Wefald_North_Dakota_PSC.pdf ("It is still our hope that the Department will recognize the critical contribution the Dakotas can make towards resolving our national energy crisis with an NIETC designation in 2009. This designation would assure investors that needed transmission investment across state boundaries is a priority, not only to the region, but to the nation as well.").

[72] Peter Behr, *Industry Hears of Details of New FERC Energy Strategy*, N.Y. TIMES (Sept. 7, 2011), http://www.nytimes.com/cwire/2011/09/07/07climatewire-industry-hears-details-of-new-ferc-energy-st-69363.html?pagewanted=all.

[73] Peter Behr, *Industry Hears of Details of New FERC Energy Strategy*, N.Y. TIMES (Sept. 7, 2011), http://www.nytimes.com/cwire/2011/09/07/07climatewire-industry-hears-details-of-new-ferc-energy-st-69363.html?pagewanted=all.

[74] Peter Behr, *Industry Hears of Details of New FERC Energy Strategy*, N.Y. TIMES (Sept. 7, 2011), http://www.nytimes.com/cwire/2011/09/07/07climatewire-industry-hears-details-of-new-ferc-energy-st-69363.html?pagewanted=all.

[75] Hannah Northey, *Transmission: Bingaman Moves to Block DOE, FERC Grid Proposal*, E & E DAILY (Sept. 13, 2011).

[76] *See* Lynn Garner, *Energy Department Drops Plan to Cede Power to FERC for Siting Transmission Lines*, 42 BNA ENVTL. REP. 2297 (Oct. 14, 2011).

[77] 16 U.S.C. § 824p(b)(1)(A).

state;[78] (3) the state is able to site the line but has not done so after one year; or (4) the state has sited the line in a manner that will not "significantly reduce transmission congestion in interstate commerce or is not economically feasible."[79] Pursuant to Section 216, FERC issued a final rule to implement its backstop siting authority which provided that state denial of a siting permit could constitute the "withholding of approval," allowing FERC to override the state decision. States, environmental groups, and industry groups challenged the rule in court and in a 2010 decision the U.S. Court of Appeals for the Fourth Circuit invalidated the rule as beyond FERC's authority.[80] The court found that if a state denies a siting permit on reasonable grounds, FERC cannot overrule that decision under Section 216 because the law only provides backstop authority where a state refuses to act, or where the state grants a permit but attaches "project-killing conditions" which constitute a misuse of state authority.[81] Thus, as a result of this decision, FERC's backstop siting authority remains limited at best.

Interstate Compacts:[82] Section 1221 of EPAct 2005 authorizes three or more contiguous states to enter into an interstate compact that establishes regional siting agencies to carry out those state's siting responsibilities.[83] To promote interstate compacts and regional coordination, FERC is prohibited from using its backstop authority to permit a line within a state that is a party to a compact, unless there is disagreement among the various party states.[84] At this time, no "interstate compacts for transmission siting . . . have been officially formed."[85]

Since EPAct 2005 and FERC's efforts to implement its provisions, some members of Congress have attempted to create a larger federal role in this area but so far without success.[86] Most notably, in 2009, the House of Representatives adopted the American

[78] 16 U.S.C. § 824p(b)(1)(B).
[79] 16 U.S.C. § 824p(b)(1)(C).
[80] Piedmont Envtl. Council v. FERC**,** 558 F.3d 304 (4th Cir. 2009), *cert. denied*, 130 S. Ct. 1138 (2010).
[81] *Piedmont Envtl. Council*, 558 F.3d at __.
[82] *See* 16 U.S.C. § 824p(b) and http://www.martenlaw.com/newsletter/20090310-transmission-siting-battle#_edn8.
[83] Diane B. Davies, et al., *Electric Transmission Siting Processes in Selected Western and Midwestern States*, 40 (Oct. 2010), available at http://www.three-county.org/6004492_1.pdf.
[84] Diane B. Davies, et al., *Electric Transmission Siting Processes in Selected Western and Midwestern States*, 40 (Oct. 2010), available at http://www.three-county.org/6004492_1.pdf.
[85] Diane B. Davies, et al., *Electric Transmission Siting Processes in Selected Western and Midwestern States*, 40 (Oct. 2010), available at http://www.three-county.org/6004492_1.pdf.
[86] *See, e.g.*, The American Clean Energy and Security Act of 2009, H.R. 2454, 110th Cong. (responding directly to the holding in *Piedmont*, the bill would have encouraged regional entities for transmission planning, would have expanded FERC backstop siting authority over all Western states, regardless of NIETC designations, and would have established a national renewable portfolio standard); The American Clean Energy Leadership Act, S. 1462, 110th Cong. (2009) (also responding directly to the holding in *Piedmont*, this bill would have granted federal backstop siting authority in all 50 states and would have developed a national renewable portfolio standard); Clean Renewable Energy and Economic Development Act, S. 539, 111th Cong. (2009) (allowing the Department of Energy to designation national renewable energy zones and expanding FERC's backstop siting authority to these zones); Power America for Tomorrow Act, H.R. 5515, 111th Cong. (requiring designation of regional transmission authorities); Renewable Electricity Promotion Act of 2010, S. 3813, 111th Cong. (establishing a national renewable portfolio standard of 15% by 2021); Securing America's Future with Energy and Sustainable Technologies Act, S.559, 112th Cong. (2011) (establishing a national renewable portfolio standard of 25% by 2025).

Clean Energy and Security Act of 2009 (also known as the Waxman-Markey Bill).[87] While the Waxman-Markey Bill was adopted by the House it was never taken up by the Senate and has completely lost any momentum in Congress at present.[88] The Waxman-Markey Bill is most well-known for creating a federal cap-and trade system to limit GHG emissions, but it also includes a major provision relating to renewable energy and electricity transmission. It endorses a regional transmission planning process that would include the expansion of federal backstop authority over transmission, and establishes FERC review of plans for consistency with transmission principles, including the deployment of renewable and low-carbon energy sources. The bill would have expanded FERC authority in western states by allowing it to preempt state action if a state failed to approve the construction and routing of a transmission line within a year after application, rejects the application, or imposes unreasonable conditions on the project.[89] The bill was a direct response to the Fourth Circuit's holding in *Piedmont*. Moreover, the bill would have established a federal RPS, requiring that six percent of electric power come from renewable resources by 2012, and twenty percent by 2020. The Waxman-Markey Bill would not have preempted state-level RPS requirements but, instead, regulated utilities would have received federal credits in an amount equal to the state credits they were already earning.[90]

2. FERC Orders Governing Transmission Siting

In general, FERC exercises general authority over electricity transmission in Section 201 of the FPA,[91] while Sections 205, 206, and 212 grant FERC the authority to set rates. Section 205 covers rate filing by public utilities engaged in the wholesale market, and Section 206 contains provisions for rate changes initiated by FERC. In both cases the standard for compliance is the "just and reasonable rate" standard. Both sections prohibit terms of service that are unduly discriminatory or preferential. Section 212 allows transmission utilities to recover their costs through rates with the same nondiscrimination conditions.[92] Pursuant to its authority, FERC has issued various orders relevant to the framework that exists for transmission systems, some of which highlight the challenges associated with building enhanced transmission for renewable energy development.

Order 888:[93] In 1996, FERC issued Order 888 which adopted a nationwide policy of "open access" to the transmission system by requiring that every transmission owner

[87] H.R. 2454: American Clean Energy and Security Act of 2009.

[88] *See* H.R. 2454: American Clean Energy and Security Act of 2009 website: http://www.govtrack.us/congress/bill.xpd?bill=h111-2454.

[89] Diane B. Davies, et al., *Electric Transmission Siting Processes in Selected Western and Midwestern States*, 42 (Oct. 2010), available at http://www.three-county.org/6004492_1.pdf.

[90] Dustin Till, *Renewable Energy Standards – California and Congress Moving in Different Directions*, MARTEN LAW (Mar. 17, 2011), http://www.martenlaw.com/newsletter/20110317-calif-renewable-energy-standards#_ftnref8.

[91] Dworkin, et al., *supra* note __, at 536; 16 U.S.C. § 824.

[92] Dworkin, et al., *supra* note __, at 536.

[93] Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,539 (May 10, 1996); F.E.R.C. Stat. & Regs. ¶ 31,036 (1996); *clarified*, 76 F.E.R.C. ¶ 61,009 (1996) [hereinafter, Order No. 888]; *modified*, Order No. 888-A, 62 Fed. Reg. 12,274 (Mar. 14, 1997); *order on reh'g*, 62 Fed. Reg. 64,688 (Dec. 9, 1997); 81 F.E.R.C. ¶ 61,248 (1997); *order on reh'g*, 82 F.E.R.C. ¶ 61,046

subject to FERC jurisdiction transmit wholesale power at rates, terms, and conditions identical to those applied to its own wholesale power supplies.[94] Order 888 required all public utilities that own, control, or operate facilities use for transmitting electric energy in interstate commerce to file nondiscriminatory open access transmission tariffs (OATTs), which contain minimum terms and conditions of service.[95] This rule was considered "unprecedented" at the time since electricity transmission had long been within the sole purview of the states and now was subject to federal requirements to promote competition.[96]

Order 2000: In 1999, the FERC approved Order 2000 which encouraged the creation of Regional Transmission Organizations (RTOs).[97] FERC's goal was to promote efficiency in wholesale electricity markets and to ensure that electricity consumers pay the lowest price possible for reliable service.[98] There are six RTOs under FERC jurisdiction: the New York ISO and the California ISO are single-state RTOs; PJM, which is in the mid-Atlantic, the Midwest ISO, which is in the upper Midwest, the Southwest Power Pool, which serves the lower Great Plains and part of the South, and the ISO New England are regional RTOs.[99] No RTOs serve the Northwest, the Southeast, the Mountain West, or the Southwest.[100] ERCOT functions as Texas's ISO, but because it is "only asynchronously connected to the interstate grid," and therefore does not involved transmission in interstate commerce, it is not under FERC's jurisdiction.[101] RTOs are discussed in more detail in Part II.C.

Order 890:[102] In 2007, FERC issued Order 890, which requires public utilities to participate in open and transparent transmission planning processes. The intent of the order was to mitigate conflict at the local and regional level by facilitating an open process and coordination.[103] In general, FERC does not have authority to allow transmission developers to require utilities to pay for transmission from which they derive no benefit.

(1998); *aff'd in part and remanded in part sub nom., Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000).

[94] The Honorable John R. Norris & Jeffery S. Dennis, *Electric Transmission Infrastructure: A Key Piece of the Energy Puzzle*, 25-SPG NAT. RESOURCES & ENV'T 3, 5 (2011).

[95] Dworkin, et al., *supra* note __, at 537.

[96] Debbie Swanstrom & Meredith M. Jolivert, *DOE Transmission Corridor Designations & FERC Backstop Siting Authority: Has the Energy Policy Act of 2005 Succeeded in Stimulating the Development of New Transmission Facilities?*, 30 ENERGY L. J. 415, 420 (2009).

[97] Regional Transmission Organizations, 89 F.E.R.C. ¶ 61,285 (1999) [hereinafter, Order No. 2000]; *order on reh'g*, Order No. 2000-A, F.E.R.C. Stats. & Regs. ¶ 31,092 (2000), *aff'd sub nom. Pub. Util. Dist. No. 1 of Snohomish County, Washington v. FERC*, 272 F.3d 607 (D.C. Cir. 2001), available at http://www.ferc.gov/legal/maj-ord-reg/land-docs/RM99-2A.pdf.

[98] FERC Order No. 2000.

[99] Dworkin, et al., *supra* note __, at 540.

[100] Dworkin, et al., *supra* note __, at 540.

[101] Dworkin, et al., *supra* note __, at 540.

[102] *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009), available at http://www.ferc.gov/whats-new/comm-meet/2007/021507/E-1.pdf.

[103] 42 U.S.C § 4321; Diane B. Davies, et al., *Electric Transmission Siting Processes in Selected Western and Midwestern States*, 42 (Oct. 2010), available at http://www.three-county.org/6004492_1.pdf.

Thus, there is no ability to share costs with all users along the lines if not all users derive a benefit from the lines. There has also been tension and uncertainty when transmission owners seek to charge users who benefit only indirectly. For example, "participant funding" principles adopted in many areas under FERC Order 890 have sometimes made cost sharing difficult, even among parties who directly benefit from new transmission. This uncertain allocation scheme has been viewed by many as "chilling transmission development."[104] This has caused FERC to propose Order 1000, which leaves cost allocation up to regional entities, but grants FERC the authority to step in when a region cannot agree.

Order 1000:[105] FERC issued Order 1000 in July 2011. The order directs organizations and states to cooperate and to consider the benefits of interstate lines. It establishes three requirements for transmission planning. Each public utility transmission provider must: (1) participate in a regional transmission planning process that satisfies the requirements set out in Order No. 890 and produce a regional transmission plan; (2) establish procedures to identify transmission needs driven by public policy requirements established by state or federal laws or regulations and evaluate proposed solutions to those transmission needs; and (3) coordinate with public utility transmission providers in neighboring transmission planning regions to determine if there are more efficient or cost-effective solutions to mutual transmission needs.[106] One of the purposes of the order is to give more priority to lines that will serve renewable energy goals and make those lines more affordable. Significantly, in Order 1000, FERC has articulated "public policy benefits" as a new type of transmission-related benefit. "That is, transmission lines that make it easier to achieve the goals of a public policy—say, a state renewable energy standard—have a clear public benefit that should be considered in planning and cost-allocation processes."[107]

The issue of public benefit in Order 1000 is significant because one of the major disputes in transmission development is who should bear the costs of new transmission infrastructure. Renewable project developers and customers in large urban areas, for example, stand to benefit from transmission upgrades in the Midwest, but utilities and states that do not stand to immediately benefit from such upgrades have opposed efforts to regionalize the costs of these projects in transmission rates. In a 2009 decision written by Judge Richard Posner, *Illinois Commerce Comm'n v. FERC*,[108] the U.S. Court of Appeals for the Seventh Circuit held that FERC was required to quantify the benefits from allocating the costs of new transmission to wholesale customers before imposing those costs. The opinion was subject to a strong dissent by Judge Cudahy, who would have

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[104] Steven C. Kohl & Scott M. Watson, *A Brief Introduction to Electricity Transmission*, MICHIGAN BAR JOURNAL 22, 25 (January 2011).

[105] Order 1000, 136 FERC ¶ 61,051, 18 C.F.R. Part 35 (2011), available at http://www.ferc.gov/whats-new/comm-meet/2011/072111/E-6.pdf.

[106] Chad Marriott, *FERC Issues Order No. 1000 on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, RENEWABLE + LAW (July 22, 2011), http://www.lawofrenewableenergy.com/2011/07/articles/transmission-1/ferc-issues-order-no-1000-on-transmission-planning-and-cost-allocation-by-transmission-owning-and-operating-public-utilities/.

[107] Richard W. Caperton, *FERC Helps Line Up Clean Energy Projects with New Rule*, CENTER FOR AMERICAN PROGRESS (July 28, 2011), http://www.americanprogress.org/issues/2011/07/ferc_order_1000.html.

[108] 576 F.3d 470, 476 (7th Cir. 2009).

approved the FERC decision to impose regional sharing of costs given the difficulty of quantifying reliability benefits of new transmission.[109]

How to spread out costs for a new transmission line are "guided by the "cost causation" principle, which has long guided how FERC and the courts approach allocating transmission costs (and recovering those costs in transmission rates). Under this principle, rates must 'reflect to some degree the costs actually caused by the customer who must pay them.'"[110] "This principle can also be thought of as a 'beneficiary pays' approach because, as the Seventh Circuit recently put it, 'to the extent that a customer benefits from the costs of new facilities, it may be said to have caused a part of those costs.'"[111] Accordingly, Order 1000 is an effort by FERC to create additional authority to spread transmission costs regionally which will facilitate regional transmission lines to expand the reliability of the transmission grid in general and increase capacity for renewable energy specifically.

3. Federal Projects and Federal Lands

In contrast with the difficulty FERC has had asserting federal authority over transmission siting on private lands, the federal government has plenary authority over transmission siting on federal lands, which constitute a significant percentage of the land in western states. Moreover, in EPAct 2005, Congress required the Interior Department to approve 10,000 MW of renewable energy generating projects on public lands by 2015, providing additional incentives for transmission projects on federal lands.[112] There are several laws in place that grant the federal government authority to site electric transmission lines on federal land. These include the Federal Lands Policy and Management Act,[113] and the National Forest Policy Management Act,[114] which allow the BLM and the Department of Agriculture, respectively, to include transmission lines in its land use plans and issue transmission permits. "The BLM program excludes highly protected areas, such as Wilderness and Wilderness Study Areas, National Monuments, and Wild and Scenic Rivers, from wind energy site monitoring and testing and development. The program also provides that, to the extent possible, wind energy projects will be developed in a manner that permits other land uses, such as mineral extraction, livestock grazing, and recreational use."[115]

As a result of this authority, there are several transmission projects proposed for federal lands, many of which are designed to facilitate the growth of renewable energy. These include the following:

SunZia: SunZia will transmit primarily renewable energy (wind and solar). The estimated transmission capacity for this proposed line is 3,000 MW for two 500 kV AC

[109] *Id.* at __. *See also* Rossi, *supra* note __, at 1447.

[110] Norris & Dennis, *supra* note __, at 27 (quoting *K.N. Energy, Inc. v. FERC*, 968 F.2d 1295, 1300 (D.C. Cir. 1992)).

[111] Norris & Dennis, *supra* note __, at 27 (quoting *Illinois Commerce Comm'n v. FERC*, 576 F.3d 470, 476 (7th Cir. 2009)).

[112] Energy Policy Act of 2005, P.L. 109-58, § 211.

[113] 43 U.S.C. §§ 1761-1771.

[114] 16 U.S.C. §§ 1600-1614.

[115] Jeremy Firestone & Jeffrey P. Kehne, *Wind, in* THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES, 362, 373 (Michael B. Gerrard, ed. 2011).

lines (or more if a hybrid line is justified).[116] The length of the proposed route is approximately 460 miles. SunZia's Proposed Route (identified in September 2008) maximizes use of public lands managed by the Bureau of Land Management (BLM), Arizona State Land Department and New Mexico State Land Office. Over 80% of this route in Arizona and New Mexico is on public lands.[117] Use of private property will be acquired through fee purchase and easements.[118] In the spring of 2011, FERC approved SunZia's application to offer capacity at negotiated rates.[119]

Zephyr Project (ZTP):[120] ZTP will be a 3000 MW, 1100 mile line out of Wyoming and into the Southwest. The line is currently designated to be in service by 2017 at a cost of $3 billion. The line is being developed by TransCanada, which received negotiated rate authority for the line from FERC in 2009. The line is currently seeking a permit from the BLM to place the line in a right-of-way (ROW) corridor. In 2010, the transmission developer offered capacity on ZTP, with 100% capacity being awarded to three wind energy companies: BP Wind Energy NA; Pathfinders Renewable Wind Energy, LLC; and Horizon Wind Energy, LLC.[121]

These projects on federal lands are closely tied to California's RPS mandate of 33% renewable, requiring the state to import more renewable electricity from other states. Nevertheless, renewable generation is often quicker to build than transmission, and the lack of transmission makes it difficult for the many proposed solar projects in Arizona, Nevada, and New Mexico to transport renewable energy to California.

B. State Renewable Energy and Transmission Policy in the Context of Federalism Values

As noted earlier, it is primarily the states rather than the federal government that are setting renewable energy policy throughout the country, aside from the PTC and the current administration's policy for federal lands. Moreover, the bulk of siting and permitting authority for transmission lines continues to rest with the states. As a result, at least until Congress takes an active role in renewable energy policy or partially or fully preempts state authority with regard to transmission siting, it is impossible to talk about renewable energy or interstate transmission without placing a significant focus on the states. As noted in Part I, state public utility commissions have authority to consider, evaluate, approve, and site intrastate and interstate transmission lines.[122] Resting so much authority with the states for the siting and operation of what is a regional and national transmission system poses unique federalism challenges.

As background, the U.S. Constitution creates a system of "dual sovereignty" between the federal government and the states, where the federal government has enumerated and

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[116] http://www.sunzia.net/index.php.

[117] http://www.sunzia.net/project_information.php?show_tab=description.

[118] *Id.*

[119] http://www.sunzia.net/documents_pdfs/ferc_order_on_sz_petition_5_20_2011.pdf 135 FERC ¶ 61,169 (May 20, 2011).

[120] *See* the Wyoming Infrastructure Authority website: http://wyia.org/projects/transmission-projects/zephyr-project-ztp/ (last visited Aug. 13, 2011).

[121] *See* TransCanada's website: http://www.transcanada.com/5253.html (last visited Aug. 13, 2011).

[122] *See* Dworkin, et al., *supra* note __, at 538. Rossi, *supra* note __, at 1019-22.

supreme powers that are limited in scope and the states have residual broad and plenary powers.[123] This federalist system assures:

> A decentralized government that will be more sensitive to the diverse needs of a heterogeneous society; it increases opportunity for citizen involvement in democratic processes; it allows for more innovation and experimentation in government; and it makes government more responsive by putting the States in competition for a mobile citizenry.[124]

Until the New Deal, the idea of "dual federalism" dominated judicial discourse surrounding the relationship between the states and the federal government.[125] The concept was that "the states and the federal government exercised exclusive control over non-overlapping regions of authority" and that the courts were charged with defining and monitoring these exclusive spheres. Since the rise of the federal regulatory state, however, these lines have become significantly blurred with the federal government and the states "engaging in overlapping regulation of a wide range of subjects including education, public health and safety, transportation, and environmental protection."[126] Scholars have given varying labels to this new brand of federalism, including "polyphonic federalism," "dynamic federalism," "empowering federalism," and "cooperative federalism."[127]

Notably though, one area in which the idea of separate spheres of federal/state regulation persists is land use, which has remained almost exclusively within the realm of state law. This is not to say that Congress does not have the power to "preempt" or displace state law in this area.[128] To the contrary, most scholars agree that Congress has authority under the Commerce Clause to regulate land use because of the impact of land use policies on interstate commerce.[129] Although Congress has regulated air pollution,

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[123] *See* U.S. CONST. art. I, § 8 (enumerating Congress's powers); U.S. CONST. amend. X (reserving unenumerated powers to the states); Gregory v. Ashcroft, 501 U.S. 452, 458 (1991).

[124] *Gregory*, 501 U.S. at 458.

[125] Robert A. Schapiro, *From Dualism to Polyphony, in* PREEMPTION CHOICE 33, 34 (William W. Buzbee ed., 2009).

[126] *See, e.g.*, United States v. Morrison, 529 U.S. 598, 646-47 (2000) (Souter, J., dissenting); Schapiro, *supra* note __, at 40-41 (stating that "overlapping state and federal regulation has become the norm for many, if not most" areas of regulation).

[127] *See* Alexandra B. Klass, *State Standards for Nationwide Products Revisited: Federalism, Green Building Codes, and Appliance Efficiency Standards*, 34 HARV. ENVTL. L. REV. 335, 357 (2010) (discussing modern theories of federalism and citing scholarly articles).

[128] Federal preemption occurs when (1) Congress preempts state law by saying so in express terms (express preemption), (2) Congress and federal agencies create a sufficiently comprehensive federal regulatory scheme in an area where the federal interest is so dominant that it requires the inference that Congress left no room for state law (implied field preemption), or (3) Congress does not completely displace state regulation but the state law actually conflicts with federal law or stands as an obstacle to achieving Congress's purposes and objectives (conflict preemption). Federal preemption is based on the Supremacy Clause of the U.S. Constitution, which states that the Constitution and U.S. laws "shall be the supreme Law of the Land" notwithstanding any state law to the contrary. U.S. CONST. art. VI, cl. 2. *See* Hillsborough County v. Automated Med. Labs, Inc., 471 U.S. 707, 713 (1985) (citing Hines v. Davidowitz, 312 U.S. 52, 67 (1941)); Caleb Nelson, *Preemption*, 86 VA. L. REV. 225, 226-28 (2000) (describing three types of preemption).

[129] *See* U.S. CONST. art. I, § 8; Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 2321, 261 (2008); Jerold S. Kayden, *National Land-Use*

water pollution, waste, coastal areas, and endangered species in ways that necessarily impinges on state and local land use authority, these interferences are the exception rather than the rule.[130] It is this history that has in many ways led to Congress's opposition to preempting state authority in the area of siting energy facilities (whether they be traditional power plants, wind farms, or other renewable energy facilities) despite recent calls from scholars that more federal involvement in what is now clearly an interstate energy system is necessary.[131]

The need for greater federal involvement or at least regional siting authorities seems even more acute, however, in the area of transmission line siting, which, unlike energy facility siting, is inherently interstate. The prior Section, however, shows how difficult it has been politically for Congress to transfer any transmission siting authority from the states to the federal government or for FERC to exercise the authority Congress has given it. Leaving siting authority for interstate transmission lines exclusively within state (and sometimes even local) authority causes significant problems because, for the most part, states consider only in-state benefits in their siting determinations for these projects even though the benefits of the projects are primarily regional.[132] But Sara Bronin has noted in the context of traditional land use regulation that there are significant political and practical difficulties associated with creating regional approaches to land use, including the need for state funding, defined powers, creating entirely new political institutions, and convincing state authorities to relinquish power in an area of traditional state concern like land use.[133] Thus, although we may have moved to a more dynamic or cooperative federalist approach to many areas that were formerly within the exclusive realm of the states such as health, safety, and environmental protection, transmission line siting continues to sit squarely in the realm of "land use" and thus remains subject to almost exclusive state control.

The fact that transmission line siting in modern times is interstate in nature but is still subject to virtually exclusive state authority raises particular federalism concerns. As Justice Brandeis stated in 1932, one of the core values of our federalist system is that it encourages innovation by allowing that "a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."[134] This model of states as "laboratories of democracy" has led to innovative state policy over the decades in social security (Wisconsin), health care reform (Massachusetts), environmental protection (California), and other policy areas, many of

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Planning in America: Something Whose Time Has Never Come, 3 WASH. U. J.L. & POL'Y 445, 451-52 (2000).

[130] *See, e.g.*, Uma Outka, *The Renewable Energy Footprint*, 30 STAN. ENVTL. L.J. 241, 255-56 (2011); Craig Anthony Arnold, *The Structure of the Land Use Regulatory System in the United States*, 22 J. LAND USE & ENVTL. L. 441, 446-47 (2007); Patricia E. Salkin, *Smart Growth and Sustainable Development: Threads of a National Land Use Policy*, 36 VAL. U. L. REV. 381, 384 (2000).

[131] *See, e.g.*, Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1049 (2009);

[132] See, e.g., Richard J. Pierce, Jr., *Environmental Regulation, Energy, and Market Entry*, 15 DUKE ENVTL. L. & POL'Y FORUM, 167, 179-180 (2005) (considering problems of state focus on in-state benefits of interstate lines where real benefits are regional in nature); Ashley Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the "Public Interest" in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705, 726-28 (2010).

[133] *See* Bronin, *supra* note __, at 264-66.

[134] New State Ice v. Liebmann, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

which were ultimately adopted by the federal government.[135] Notably though, in each of these areas, states could work independently to set policy for their citizens without the need to work cooperatively with other states or the federal government. With their own taxing power and regulatory authority, states can for the most part create significant environmental protection programs, health care programs, education programs, and other policies even if other states choose not to do likewise. Thus, each state can serve as its own laboratory.

The same model does not hold true for transmission lines. With perhaps the exception of Texas as described below, most states are dependent on other states for energy imports or exports and cannot construct transmission lines for such interstates imports and exports without working with other states. Thus, Justice Brandeis's vision of states as individual laboratories does not apply easily to innovations in transmission siting and development. The question then, is how to evaluate innovations states are taking within the federalist system and build on them. This Section thus considers what states are doing not just in terms of their individual renewable energy and transmission line policy innovations but with a focus on how they are cooperating with other states to increase renewable energy and develop transmission within a region. The subsections that follow consider groups of states in the Midwest and West, as well as Texas, which is arguably the only state that can realistically engage in its own "laboratory" without working with other states, at least for the present time.

1. The Midwest: Minnesota, North Dakota, and Iowa

Several states in the Midwest are leaders in developing both wind energy and regional transmission to integrate wind energy into the transmission system. While those states must work within the parameters of the Midwest ISO with regard to access to transmission lines, Minnesota, North Dakota, and Iowa in particular have developed strong renewable energy polices and utilities in those states have worked together to obtain multi-state approval for siting those lines.

With regard to Minnesota, as of March 2011, the state had installed 2,485 megawatts of wind power,[136] resulting in the state generating 9.7% of its electricity from wind for 2010, and placing it in the top five states for both megawatts of wind installed and percent of total electricity generated from wind.[137] With no coal, natural gas, or oil reserves, Minnesota is an electricity importer, and developing indigenous wind resources has enjoyed broad political support.[138] In 2007, Minnesota enacted its Renewable Energy Standard (RES),[139]

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[135] *See, e.g.*, Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009) (discussing California's innovations with air pollution regulation); Kirsten H. Engel, *Mitigating Global Climate Change in the United States: A Regional Approach*, 14 N.Y.U. ENVTL. L.J. 54, 63-64 (2005) ("History is rife with examples of federal legislation that has drawn heavily from ideas developed at the state level, social security being a prominent example."); Edward A. Zelinsky, *The New Massachusetts Health Law: Preemption and Experimentation*, 49 WM. & MARY L. REV. 229, 231 (2007) (discussing Massachusetts's innovative health care law).

[136] Wind Energy Facts: Minnesota, American Wind Energy Association, at www.awea.org/learnabout/publications/upload/1Q-11-Minnesota.pdf.

[137] *Id.*

[138] Elizabeth J. Wilson & Jennie C. Stephens, *Wind in a Carbon-Managed World: States, Resources, Policy and Discourse*. 43 ENVT'L SCI. & TECH. 9063, 9064 (2009).

which requires utilities to generate at least 25 percent of their electricity provided to customers from renewable energy by 2025.[140] The RES also allows Minnesota utilities to meet their statutory obligations by purchasing RECs from outside of the state. Because Minnesota's largest area of potential wind development is the Buffalo Ridge in the southwest corner of the state and the neighboring states of Iowa, North Dakota, and South Dakota, fulfilling the RES will include siting additional transmission lines to bring wind energy from those states to Minnesota.[141]

North Dakota, the "Saudi Arabia of Wind,"[142] had 1,424 MW of wind energy online in March 2011, providing 12% of the electricity generated in the state. North Dakota is ranked second in the nation in terms of percentage of electricity derived from wind and ninth for installed wind capacity.[143] North Dakota is an electricity exporter, with plentiful coal and recently developed oil resources as well as plentiful wind resources. Because of its small population, and limited demand for electricity within the state, transmission lines are a key component of developing North Dakota's wind resources. It has a voluntary renewable portfolio standard of 10% renewables by 2015,[144] and a corporate renewable energy tax credit that provides a refund of up to 15% of the cost of installing a renewable energy system through 2014.[145] Also, commercial wind energy operations of 100 MW or greater built before 2015 will be taxed at 3% (rather than 10%) of assessed value.[146]

Wind development in Iowa has also been rapid and steady. As of March 2011, Iowa had 3,675 MW of wind energy online, placing it second in the nation in installed wind capacity behind Texas.[147] Iowa also ranks first in the nation for percentage of state power derived from wind, at 15.4%.[148] Iowa was the first state to enact a renewable energy purchase requirement back in 1983, and in a survey conducted July 1, 2011, 85% of state residents "have a favorable impression of wind energy and wind power companies."[149]

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[139] MINN. STAT. § 216B.1691 subd. 2a.

[140] MINN. STAT. § 216B.1691 subd. 2a(a). For Xcel, the largest utility in Minnesota and the only one that owns a nuclear power plant, the requirement is set at 30 percent. MINN. STAT. § 216B.1691 subd. 2a(b).

[141] *Project that Could Boost Midwest 'Wind Belt' Faces Enviro Opposition*, Environment & Energy Publishing (Dec. 1, 2008) http://www.eenews.net/public/Greenwire/2008/12/01/4. *But see* John Bailey, et al., *Meeting Minnesota's Renewable Energy Standard Using The Existing Transmission System*, (Nov. 2008), http://www.c-bed.org/pdf/meetingminnesotares.pdf (arguing that Minnesota's Renewable Portfolio Standards can be met without large transmission upgrades).

[142] Joey Peters, *"Saudi Arabia of Wind" Has Trouble Figuring Out How to Get the Power Out*, N.Y. TIMES, April 6, 2011, at http://www.nytimes.com/cwire/2011/04/06/06climatewire-saudi-arabia-of-wind-has-trouble-figuring-ou-17108.html?pagewanted=all.

[143] AWEA North Dakota Fact Sheet, 1st Quarter 2011: http://awea.org/learnabout/publications/upload/1Q-11-North-Dakota.pdf.

[144] N.D. CENT. CODE § 49-02-24.

[145] N.D. CENT. CODE § 57-38-01.8.

[146] N.D. CENT. CODE § 57-06-14.1.

[147] Wind Energy Facts: Iowa, American Wind Energy Association, (May 2011), http://www.awea.org/learnabout/publications/factsheets/upload/1Q-11-Iowa.pdf.

[148] Wind Energy Facts: Iowa, American Wind Energy Association, (May 2011), http://www.awea.org/learnabout/publications/factsheets/upload/1Q-11-Iowa.pdf.

[149] New Poll: In Iowa, The State That Knows Wind Energy the Best, Voters Overwhelmingly Support It and The Companies That Make It, American Wind Energy Association Press Release, (July 1, 2011), http://www.awea.org/newsroom/pressreleases/Iowa-Poll.cfm.

Although Iowa does not have an RPS, wind generators sell RECs to utilities in other states,[150] and Iowa offers a very generous wind production tax credit.[151]

Renewable energy development in these three states has been significant and appears to be a function of individual state policies to encourage renewable energy development by either setting state mandates (Minnesota), providing generous tax credits (Iowa), or encouraging development of wind for export (North Dakota). In order to realize such growth, the states have had to work together on transmission issues. The largest transmission siting project underway in Minnesota is the CapX2020 project, which 11 Minnesota utilities jointly proposed to upgrade the state electrical grid.[152] Through a Vision Plan where the utilities sought to determine necessary transmission upgrades to meet the demand growth of utilities serving Minnesota customers,[153] the CapX2020 lines were identified as the most critical group of lines to address the issues of grid reliability, demand growth, and renewable energy support.[154] CapX2020 primarily consists of three 345-kV lines spanning nearly 600 miles from Monticello, Minnesota to Fargo, North Dakota; from Hampton, Minnesota to Brookings County, South Dakota; and from Hampton, Minnesota to La Crosse, Wisconsin.[155]

Many environmental groups, which frequently oppose transmission lines for environmental reasons, have supported CapX2020 as a way to build the infrastructure necessary to develop renewable energy.[156] After obtaining the Certificate of Need and Route Permits in Minnesota, the CapX2020 project will have obtained the necessary approvals to begin construction. The Midwest ISO (MISO) must approve transmission pricing, however, and the CapX2020 Hampton to Brookings County line is slated for review as a Multi Value Project (MVP), which will allow costs to be spread (socialized) among the prioritized MISO regional utilities that benefit from MVP cost allocation.[157]

As for Iowa, because of the significant amount of wind power online in the state, there is significant interest by out-of-state companies in developing greater transmission capability to bring wind from Iowa to larger population centers. One proposal involves Houston, Texas-based Clean Line Energy Partners, which has taken steps to construct a 500-mile DC "merchant" transmission project across Iowa, transferring wind energy from the state to the Chicago area and beyond. The partnership is calling its Iowa project the "Rock Island Line" because the line would roughly follow the routes of the former Rock Island Railroad. The proposed $2 billion project was designed to spur development of

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[150] Brent Stahl, Lisa Chavarria & Jeff Nydegger, *Wind Energy Laws and Incentives: A Survey of Selected State Rules*, 49 WASHBURN L.J. 99, 108 (2009).

[151] IOWA CODE § 476B.2; Stahl, et al., *supra* note __, at 107.

[152] *CapX2020 Frequently Asked Questions*, CAPX2020, http://www.capx2020.com/faq.html (last visited June 26, 2011).

[153] *See* CapX2020, *CapX2020 Application to the Minnesota Public Utilities Commission for Certificates of Need*, §§ 1.4, 6, A-1 (Aug 16, 2007) available at: http://www.capx2020.com/Regulatory/State/Minnesota/CON_CapX2020_3_projects.html.

[154] *See id.*

[155] *Id.*

[156] *Wind Power Scores a Victory in Power Line Decisions*, Midwest Center for Environmental Advocacy (Apr. 16, 2009) http://www.fresh-energy.org/media_center/news_releases/2009-04-16%20Cap%20X%20renewable.html.

[157] MISO Stamps MVP Status on CapX2020 Brookings Line, NA Wind Power (June 23, 2011), http://nawindpower.com/e107_plugins/content/content.php?content.8130.

additional wind turbines in northwest Iowa, northeast Nebraska, and southeast South Dakota.[158] Notably, in this proposal Clean Line Energy Partners is targeting not MISO, but the PJM (Pennsylvania, New Jersey and Maryland) transmission network farther east that runs from Ohio to the Atlantic seaboard south of New York.[159] Because of the high cost of DC/AC converters substations, the 600 KV Rock Island Line would not have any "off-ramps" in Iowa but instead would be an interstate power highway with no interchanges, shipping energy across and out of the state. It remains to be seen if such a proposal would be viable.

In addition, MidAmerican Energy is looking to build a project similar to the Rock Island Line. MidAmerican and its partner, American Electric Power of Columbus, Ohio, want to build a line from Iowa east to at least Ohio. The venture is working first on the eastern connection from Ohio west into Illinois.[160] The project proposers favor the 2011 FERC order (Order 1000) because it "gives the various authorities a rationale to assign portions of the costs of such a line to all the recipients of the electricity, not just the builders who would start the lines somewhere in the Dakotas, Minnesota or Iowa."[161] However, for that same reason the Coalition for Fair Transmission Policy, a group of Eastern utilities and state regulators, has stated that "socializing the costs of transmission lines to access remote renewable resources amounts to an expensive subsidy for some renewable energy developers that distorts the marketplace, and ultimately results in higher electricity prices for everyone."[162] Thus, this project shows the potential impact of FERC Order 1000 on transmission buildout. It also illustrates how those states with renewable energy resources in the Midwest and the West perceive economic benefits in both the short-term and the long-term from a wider spreading of costs while those states without such resources further east are skeptical, if not outright hostile, to that goal.

State policies and progress in the Midwest illustrate that states within a region can work together to develop wind resources in one state and use them in-state or, in the case of North Dakota, export them to other states. Utilities in those states as well as developers in other states have collaborated and invested to create the groundwork for new, interstate transmission lines, to distribute that power both within the Midwest and to eastern states which, for the most part, have had much more difficulty siting new transmission lines. In doing so, the states and the utilities within those states are creating the groundwork for new regional networks to form. If states reach a comfort level with such regional cooperation, perhaps a transfer of some authority to a defined regional entity with regard to planning, siting or both, as described in Part III is politically feasible.

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[158] *Wind Transmission Plans Blow into Iowa*, SIOUX CITY JOURNAL (December 19, 2010), http://www.siouxcityjournal.com/business/local/article_90b6806c-f6b4-5ad3-9fb0-e583567ae519.html.

[159] *See* http://www.wind-watch.org/news/2011/06/15/proposal-calls-for-big-power-transmission-line-across-iowa/.

[160] Dan Piller, *Federal Ruling Boosts Wind Energy Interests*, THE DES MOINES REGISTER (Aug. 3, 2011) http://www.desmoinesregister.com/article/20110804/BUSINESS/108040307/1029/.

[161] Dan Piller, *Federal Ruling Boosts Wind Energy Interests*, *supra* note __. Two of the newly-approved Multi-Value Projects (MVPs) in the MISO region, discussed in Part II.C *infra*, are in Iowa. *See* MISO, Mutli-Value Projects, at https://www.midwestiso.org/WhatWeDo/Pages/One-Pagers.aspx.

[162] Dan Piller, *Federal Ruling Boosts Wind Energy Interests*, *supra* note __.

2. The West: California and Oregon

The situation in the West is perhaps more challenging than the Midwest. Although areas of the West Coast have significant wind resources, the West has a much larger population to serve and California's new renewable energy mandates likely can only be fulfilled through significant wind development and transmission buildout both within and outside of California. Indeed, California is an electricity importer and its demand drives much of the transmission planning in the West.[163] As of March 2011, California had 3,179 MW of wind energy capacity online,[164] ranking it third in the nation with regard to total MW of wind energy installed.[165] However due to its large demand, in 2010 only 3.3% of California's electricity demand is generated by wind power, ranking it fourteenth among the states in percentage of state energy derived from wind.[166] Amended in 2011, California has one of the most aggressive RPS in the nation. With a deadline of January 1, 2012 to set utility-specific targets, the standard requires 33 percent of electricity sold in California to be generated by renewable energy resources by 2020.[167] To help reach this standard, California has implemented additional incentives to promote renewable energy, such as feed-in tariffs that set procurement rates for renewable energy at prices comparable to that of natural gas.[168] Additionally, California has created the Renewable Energy Transmission Initiative (RETI) to identify transmission projects required to meet the RPS goals, and to bring together transmission stakeholders to create a comprehensive transmission plan for California.[169]

With regard to transmission projects in the state, Southern California Edison is planning the biggest transmission project in its history, the Tehachapi Renewable Transmission Project, which will transport wind energy from the Tehachapi area of Kern County to Southern California Edison's power grid, which serves 14 million people. The $3.5 billion line would be capable of carrying 4,500 MW.[170] The California PUC approved the first phase of the project in March 2007 and construction of that phase is underway.[171] The next phase involves 173 miles of transmission lines.[172] The project will be very important for

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[163] Timothy P. Duane, *Greening the Grid*, 34 VT. L. REV. 711, 719 (Summer 2010).

[164] Wind Energy Facts: California, American Wind Energy Association, at http://www.awea.org/learnabout/publications/factsheets/factsheets_state.cfm.

[165] 2010 U.S. Wind Industry Annual Market Report: Rankings, AWEA (May 2011), http://www.awea.org/learnabout/publications/factsheets/upload/2010-Annual-Market-Report-Rankings-Fact-Sheet-May-2011.pdf

[166] 2010 Wind Technologies Market Report, Department of Energy (June 2011), http://eetd.lbl.gov/ea/ems/reports/lbnl-4820e.pdf.

[167] CAL PUB. UTIL. CODE § 399.11.

[168] Jim Rossi, *Clean Energy and the Price Preemption Ceiling* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1899026.

[169] Phase 1a Final Report, Renewable Energy Transmission Initiative, § 1-1 (April 2008), http://www.energy.ca.gov/2008publications/RETI-1000-2008-002/RETI-1000-2008-002-F.PDF.

[170] Work starts on biggest electrical transmission line project in Southern California history, Pasadena Star-News (Sep. 6, 2010) http://www.pasadenastarnews.com/ci_16008367

[171] Tehachapi Renewable Segments 4-11, Southern California Edison, http://www.sce.com/PowerandEnvironment/Transmission/ProjectsByCounty/Multi-CountyProjects/TRTP4-11/tehachapi-4-11.htm (last visited July 19, 2011).

[172] Tehachapi Renewable Segments 4-11, Southern California Edison, http://www.sce.com/PowerandEnvironment/Transmission/ProjectsByCounty/Multi-CountyProjects/TRTP4-11/tehachapi-4-11.htm (last visited July 19, 2011).

linking renewable energy to California demand centers. In June of 2011, Google announced that it would increase its investment in the Alta Wind Energy Center (AWEC) in Tehachapi, by providing another $102 million to finance the 168 MW Alta V Project. This adds to the $55 million Google has already invested in wind power in the area.[173] Also in June 2011, San Diego Gas & Electric announced large solar contracts, one of which will connect to the grid through the Tehachapi Renewable Transmission Project.[174] Despite the PUC's grant of authority for the project, Chino Hills has pursued litigation to enforce its ability to grant right-of-way property rights, and to deny the PUC exclusive jurisdiction of this area. The state trial court ruled in 2010 that the PUC had exclusive jurisdiction, and a decision from the California Court of Appeals is pending following oral argument in the summer of 2011.[175]

As an electricity importer, California will likely also need to rely on neighboring states to meet its renewable energy needs.[176] While Arizona and Nevada can provide solar energy in the future if certain major projects come online, California has historically looked to Oregon for more immediately available wind energy. Indeed, Oregon has exported approximately half of its wind power to California since 1998.[177] As of May 2011, Oregon had 2,104 MW of wind power online, ranking it 7th in the nation, and deriving a proportional 7.1% of its electricity from wind.[178] In 2007, Oregon required its largest electric utilities (PacifiCorp, Portland General Electric, and the Eugene Water and Electric Board) to ensure 5% of its retail electricity was renewable by 2011, and Oregon has met this standard. The requirement increases to 15 percent by 2015, 20 percent by 2020, and 25 percent by 2025. Smaller utilities will also have to meet renewable energy standards, but the percentage of renewable energy is either five percent or 10 percent based on the size of the utility.[179] Companies in Oregon that do not comply with the RPS are subject to a fine.[180] Oregon began a pilot solar feed-in tariff program in 2010, offering payments for electricity produced by solar power and paid by three participating utilities to owners of solar energy systems.[181] Through 2014, the payment rates are between $.30 and $.37/kilowatt-hour.[182] Oregon also has tax credits for renewable energy equipment

[173] *Update: Investing Another $102 Million in the Alta Wind Energy Center*, Google Green Blog (June 22, 2011), http://googlegreenblog.blogspot.com/2011/06/update-investing-another-102-million-in.html

[174] California Utility Signs Contracts for 237MW of Solar, Green Economy, (June 23, 2011) http://uk.ibtimes.com/articles/20110623/california-utility-signs-contracts-237mw-solar.htm.

[175] City, SCE Draw Lines, Inland Valley Daily Bulletin (June 30, 2011) http://www.istockanalyst.com/business/news/5266930/city-sce-draw-lines.

[176] *See, e.g.*, Scott Streater, *California Power Demand Drives Expansion of Utah Wind Farm*, LAND LETTER, E&E NEWS, Feb. 3, 2011 (describing development of 700 MW wind energy facility on federal land in Utah with the power to be sold to the Southern California Public Power Authority and transmitted to customers in the Los Angeles area).

[177] Cassandra Profita, *Why Oregon Imports Power from Fossil Fuels and Exports Renewable Energy*, OPB NEWS (June 1, 2011), http://www.nwriverpartners.org/images/stories/Why_Oregon_Exports_Renewable_Power-OPB-6-1-11.pdf.

[178] American Wind Energy Association, Wind Energy Facts for 1st Quarter 2011: Oregon, http://awea.org/learnabout/publications/upload/1Q-11-Oregon.pdf.

[179] OR. REV. STAT. § 469A; Senate Bill: http://www.oregon.gov/ENERGY/RENEW/docs/sb0838.a.pdf?ga=t.

[180] OR. REV. STAT. § 469A.200.

[181] Participating utilities are Portland General Electric, Pacific Power and Idaho Power.

[182] Oregon Energy Planning Report, Dec. 20, 2010, page 20: http://www.oregon.gov/ENERGY/RENEW/OEPC/docs/EnergyPlanFinal.pdf. The third round of the program opened on April 1, 2011 and was quickly fully subscribed. The next round will be open October 1, 2011.

manufacturers[183] and community renewable energy feasibility funds[184] to support renewable energy development.

While Oregon's policies have encouraged renewable growth, the state has not directly addressed the need for new transmission lines.[185] Similar to other states, "Oregon faces a growing schism between its lack of capacity to move energy from renewable sources, while current legislation, tax policies, and public demand are creating incentives and pressure to develop these renewable energy sources."[186] To address these issues, in 2008, the governor created the Oregon Energy Planning Council (OEPC).[187] The first OEPC report in December 2010 recommended that "the state move forward with developing a comprehensive energy strategy to maintain its leadership in energy planning, conservation, and new renewable technology."[188] The report made specific recommendations to improve Oregon's transmission siting process, including creating a stronger link between PUC and EFSC to better address public's concerns regarding the necessity of new transmission lines, creating new regulations to balance the objectives of multiple affected state agencies, developing clear siting standards to make the application process both more predictable and to better realize the public benefits of new transmission, eliminating the lack of communication and multiple levels of review by different state agencies, and creating a "phased study approach" that allows applicants to move forward in their applications while various studies are being conducted.[189]

As noted above, Oregon has exported approximately half of its wind power to California since 1998.[190] As a result, Oregon imports much of its electricity from Montana and Wyoming coal-fired power plants.[191] In the meantime, however, Google and others are in the process of developing the 845 MW Shepherd's Flat Wind Farm in Oregon which is likely to be the largest in the world when completed. The $2 billion project has received $100 million in funding from Google[192] as well as a $1.3 billion loan from the Department

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Subsequent re-openings will take place every six months until the capacity for the program is full. The rates listed are for the current round of the program. *See* http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=OR134F&re=1&ee=1.

[183] OR. REV. STAT. § 330-090-0105 to 330-090-0150.

[184] http://www.oregon.gov/ENERGY/RENEW/CREFF.shtml.

[185] Paul Hoobyar, *The Rational for Addressing Oregon's Regulatory Process for Electric Transmission Siting: "How Can Oregon Improve its Transmission Siting Process,"* 1-2, available at http://www.oregon.gov/ENERGY/RENEW/OEPC/docs/RationaleForEPCtoAddressORSitingRegfinal.pdf.

[186] Hoobyar, *supra* note __, at 2.

[187] The Oregon Energy Planning Council, *Oregon Energy Planning Report*, OREGON DEPARTMENT OF ENERGY 5 (Dec. 20, 2010), available at http://www.oregon.gov/ENERGY/docs/reports/legislature/2011/oregon_energy_planning_report_2010.pdf.

[188] *Id.* at 5.

[189] *Id.* at 5-6, 27-31.

[190] Cassandra Profita, *Why Oregon Imports Power from Fossil Fuels and Exports Renewable Energy*, OPB NEWS (June 1, 2011), http://www.nwriverpartners.org/images/stories/Why_Oregon_Exports_Renewable_Power-OPB-6-1-11.pdf.

[191] *Id.*

[192] Paul Shukovsky, *Google Expands Green Investments With $100 Million Stake in Oregon Wind Farm*, DAILY ENVIRONMENT REPORT (April 21, 2011), http://news.bna.com.ezproxy.law.umn.edu/deln/DELNWB/split_display.adp?fedfid=20562711&vname=dennotallissues&wsn=495468000&searchid=14939031&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=0.

of Energy.[193] The wind farm has received transmission rights, and is slated to become operational by September 2012,[194] and 100% of the power generated from this farm will be exported to California.[195]

The lack of transmission capacity in the Pacific Northwest region has become acute, and wind farms have been forced to curtail energy production on a rolling basis.[196] This occurred in the Pacific Northwest in 2011, with 100,000 MWh curtailed this year, after a particularly wet winter and a rapidly warming spring.[197] The massive amounts of hydroelectric power swamped Bonneville Power Association's (BPA's) electric grid, causing BPA to curtail wind energy.[198] BPA insists that it did everything it could to incorporate wind into the system, but wind developers have built much faster than the Northwest Wind Integration Action Plan of 2007 predicted. Wind farms filed a petition with FERC in the summer of 2011, asking FERC to force BPA to honor its transmission contracts and undertake "negative pricing," which would involve paying utilities outside the region to shut down their own generation and take all of BPA's excess power.[199] BPA contended that such actions would increase its own customers' rates, which would not be fair since most power is sold out of state.[200] In December 2011, FERC ordered BPA to establish new policies to avoid curtailing transmission access for wind generation during periods of surplus hydropower and found that BPA's actions constituted a discriminatory practice under the Federal Power Act.[201]

These developments in California and Oregon illustrate how states, even ones as large as California, cannot rely solely on their own renewable resources or transmission buildout to meet renewable energy goals. If Oregon is not successful in developing intrastate and

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[193] Tom Alkire, *DOE Issues $1.3 Billion Loan Guarantee for Wind Farm Billed as World's Largest*, DAILY ENVIRONMENT REPORT (Oct. 13, 2010), http://news.bna.com.ezproxy.law.umn.edu/deln/DELNWB/split_display.adp?fedfid=17992006&vname=dennotallissues&wsn=499652000&searchid=14939031&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=0.

[194] *Id.*

[195] *Id.*

[196] William Pentland, *Transmission Bottlenecks Bad News for Renewable Energy*, FORBES BLOG (May 3, 2011), http://blogs.forbes.com/williampentland/2011/05/03/transmission-bottlenecks-bad-news-for-renewable-energy/

[197] Herman K. Trabish, *Smackdown: Wind vs. Washington State Grid Operator Over Renewable Integration*, GREENTECHMEDIA (May 24, 2011), http://www.greentechmedia.com/articles/read/smackdown-wind-vs-washington-state-grid-operator-over-renewable-integration/. Ted Sickinger, *The Bonneville Power Administration Punches Back in Wind Versus Water Fight*, OREGONLIVE.COM (July 20, 2011), http://www.oregonlive.com/business/index.ssf/2011/07/the_bonneville_power_administr.html; Eileen O'Grady, *Bonneville Defends Wind Curtailment in FERC Filing*, REUTERS (Jul. 20, 2011), http://www.reuters.com/article/2011/07/20/utilites-bonneville-ferc-idUSN1E76J26320110720.)

[198] Trabish, *supra note* __. The problem with curtailment is blamed, by some, on the need to protect salmon from spilling water over the hydro dams, and by others, on a failure to properly integrate wind into the BPA system. BPA is an agency of the Department of Energy which markets wholesale electricity from 31 federal hydroelectric projects in the West on 15,000 miles of transmission over portions of eight states. Lynn Garner, *Bonneville Power Ordered to Revise Policy to Accommodate Hydropower, Wind Energy*, BNA DAILY ENVT. REPT. A-12 (Dec. 12, 2011).

[199] Sickinger, *supra* note __.

[200] Sickinger, *supra* note __.

[201] Lynn Garner, *Bonneville Power Ordered to Revise Policy to Accommodate Hydropower, Wind Energy*, BNA DAILY ENVT. REPT. A-12 (Dec. 12, 2011).

interstate transmission, it impacts not just Oregon but California and the entire Pacific Northwest, as shown by the difficulties with the BPA grid. California is certainly acting as a "laboratory of democracy" with its aggressive RPS, just as it has in many other areas of environmental protecting including vehicle emissions, smog, water resource protection, and chemical regulation. In those areas, however, California could experiment and make progress on its own. In the area of renewable energy, because of its dependence on outside sources of energy and a transmission system to bring that energy to the state, it must rely on other states, and establish regional arrangements, seek federal assistance, or create an economic environment that encourages sufficient investment in transmission for the entire region.

3. Texas

Unlike the Midwest and West examples above, where states must rely on their neighbors for energy imports, exports, and transmission and answer to the federal government on rate and discrimination issues, Texas has created its own independent "nation-state" with regard to electricity transmission. Texas's interstate independence began shortly after the passage of the Federal Power Act in 1935, when utilities in Texas chose to remain wholly intrastate so as to not subject themselves to Federal Power Commission (now FERC) jurisdiction.[202] During World War II, these intrastate utilities began to interconnect, forming an intrastate system known as the Texas Interconnected System (TIS).[203] In 1970, TIS and other intrastate utilities banded together to form the Electric Reliability Council of Texas (ERCOT), which was formed as "a "regional electric reliability council" reporting to the North American Electricity Reliability Corporation.[204] ERCOT manages 85 percent of Texas's electric grid.[205] FERC has continued to recognize ERCOT's independence, "so long as electric energy does not flow over transmission lines between ERCOT and the rest of the continental United States."[206] Thus, even though there are power lines which "connect" ERCOT to the rest of the United States, because power does not regularly flow between ERCOT and the rest of the country, ERCOT remains independent.[207] This means that Texas on its own can establish renewable energy policies, decide where wind farms and other energy-generating industry should be located, site the lines to bring the wind to population centers, and put the energy directly in the grid without approval from FERC or a regional RTO or ISO.

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[202] Jared M. Fleisher, *ERCOT's Jurisdictional Status: A Legal History and Contemporary Appraisal*, 3 TEX. J. OIL GAS & ENERGY L. 4, 11 (2008).

[203] Fleisher, *supra* note __, at 11.

[204] Fleisher, *supra* note __, at 11.

[205] *About ERCOT*, ERCOT, http://www.ercot.com/about/; *see also* 118 FERC ¶ 61,198 (finding that transmission facilities connected to ERCOT that do not comingle energy with other organizations do not result in interstate transmission with ERCOT and are not within FERC's interstate pricing jurisdiction).

[206] Dworkin, et al., *supra* note __, at 540. *See Order Granting Petition for Declaratory Order*, 118 F.E.R.C. ¶ 61,198, Docket No. EL-06-87-000 (March 15, 2007) ("The Commission finds that the proposed transmission line, as described in the instant filing, does not disturb this jurisdictional status quo because electric energy will not flow over that transmission line between ERCOT and the rest of the continental United States.").

[207] Fleisher, *supra* note __, at 12-14, 20.

Wind development in Texas has been rapid. As of March 2011, Texas by far led the nation with 10,135 MW of wind power online.[208] In 2010, 6.4% of Texas's electricity was generated by wind resources, but wind curtailment was also a problem, with 8% of wind curtailed in 2010 making transmission a particularly salient issue.[209] One way in which Texas helps promote wind projects, most located in the Western and Panhandle regions, is by allowing counties and other organizations to offer tax abatements as a developer incentive to build wind projects.[210] For example, in July 2011, Young County agreed to a structured tax abatement with Gamesa Energy that would allow the company to build a wind farm and waive taxes.[211] If the wind farm is later sold to a non-taxable entity, Gamesa has agreed to pay a portion of the abated taxes back to the county.[212] Notably, Texas has already met its Renewable Portfolio Standard statutory goal of having 10,000 megawatts of installed renewable capacity by January 1, 2025.[213]

When the Texas legislature established its RPS goal in 2005, it also addressed transmission constraints by creating a process for the Texas Public Utilities Commission to plan transmission facilities in advance of renewable energy generation facilities.[214] The resulting five Competitive Renewable Energy Zones (CREZs) the TPUC established led to a transmission plan that will allow 18,456 MW of wind energy from the windy Western portions of the state to reach the populous cities in the East.[215] To build out the identified transmission projects, the TPUC assigned them to various Transmission Service Providers (TSPs) for completion.[216]

There are several private and public transmission projects underway in Texas. NextEra Energy built the Texas Clean Energy Express privately, outside of the TPUC's CREZ planning process,[217] and outside the CCN process.[218] Because it was a private or "merchant" line, NextEra did not have eminent domain authority, and instead acquired the land "by

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[208] *Wind Energy Facts: Texas*, American Wind Energy Association, (May 2011), at http://www.awea.org/learnabout/publications/factsheets/factsheets_state.cfm.

[209] *Wind Energy Facts: Texas*, American Wind Energy Association, (May 2011), at http://www.awea.org/learnabout/publications/factsheets/factsheets_state.cfm; Ryan Wiser & Mark Bolinger, *2010 Wind Technologies Market Report*, Lawrence Berkeley National Laboratory, Department of Energy, http://eetd.lbl.gov/ea/emp/reports/lbnl-4820e.pdf, p. vii.

[210] Stahl, et al., *supra* note __, at 138–39. Although in 2008, an opinion by the Texas Attorney General cast doubt on the continued availability of a tax abatement on wind projects, the legislature amended the statute in 2009 to ensure wind projects were still viable. *Id. See* TEX. TAX CODE ANN. §§ 312.401–312.403, 313.001–313.171.

[211] Commissioners Approve Wind Farm Tax Abatement, RenewablesBiz (July 12, 2011), http://www.renewablesbiz.com/print/227605.

[212] Commissioners Approve Wind Farm Tax Abatement, *supra* note __.

[213] TEX UTIL. CODE ANN. § 39.904(a) (West 2009).

[214] Stahl, et al., *supra* note __, at 136-39; *see also* TEX. UTIL. CODE ANN. § 25.174.

[215] CREZ Home Page, Public Utilities Commission of Texas, http://www.texascrezprojects.com/ (last accessed July 17, 2011).

[216] 16 TEX. ADMIN. CODE § 25.174(c)(1).

[217] Eileen O'Grady, *UPDATE 1-FPL Power Line May Complicate Texas Wind Growth*, REUTERS (Oct. 28, 2009), http://in.reuters.com/article/2009/10/27/utilities-wind-idINN2725847720091027.

[218] Lorie Woodward Cantu, Texas High Wires, Texas Wildlife 30 (July 2009), http://clearviewalliance.org/docs/Texas%20High%20Wires%20article,%20electronic%20copy,%206-12-09.pdfhttp://clearviewalliance.org/docs/Texas%20High%20Wires%20article,%20electronic%20copy,%206-12-09.pdf.

paying large, undisclosed sums to landowners."[219] Running from NextEra's wind farms in Abilene, Texas to a substation in Comfort, Texas, the 200 plus mile, 345-kV line allows NextEra to bring its 850 MW of wind from western Texas to the load centers.[220] The line was built extremely quickly, with the planning and construction processes completed in less than 18 months.[221] Because it was private, publicity regarding construction was relatively quiet with most of the details of the line coming to light only after construction was completed.[222] In October 2010, ERCOT's CEO H.B. Doggett predicted that "several merchant and private transmission lines will surface across Texas to carry wind-generated electricity to market."[223]

According to the Department of Energy, the success of this project has directly resulted in less wind power curtailment in 2010 than there was in 2009.[224] In fact, shortly after the line was completed on October 16, 2009, ERCOT "hit the highest level of 'instantaneous penetration' of wind power as a percentage of load that it has ever reached" with over 25% of total demand being met by wind power.[225] However, a side effect of the project is that landowners may now expect more money to be offered before they give property rights to utilities constructing transmission lines.[226] In late 2010, NextEra Energy offered to place the Texas Clean Energy Express line into public service, essentially negating the need for a similar line proposed as a part of the CREZ transmission build out.[227] Landowners and utilities voiced opposition to this plan, which they argued would set a bad precedent and negate years of planning that had already gone behind the proposed CREZ line.[228] Despite

[219] Kate Galbraith, *Fighting the Power Lines to Protect Hill Country Vistas*, Sep. 9 2010, http://www.texastribune.org/texas-energy/wind-energy/fighting-power-lines-protect-hill-country-vistas/

[220] Jeffrey Ryser, ERCOT *Sees Record Highs in Grid Uptake of Wind Generation, Using New Transmission*, GLOBAL POWER REPORT (Nov. 19, 2009).

[221] Michael O'Sullivan, Building the Next Era of Clean Energy, NextEra Energy Resources 2010-2014 Development Overview, (May 4, 2010) http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NDQ0MTd8Q2hpbGRJRD0tMXxUeXBlPTM=&t=1.

[222] Lynn Doan, *ERCOT CEO Predicts Private Transmission Build-out in Texas' Future*, SNL Electric Utility Report (Nov. 1, 2010).

[223] Lynn Doan, *ERCOT CEO Predicts Private Transmission Build-out in Texas' Future*, SNL Electric Utility Report (Nov. 1, 2010).

[224] 2010 Wind Technologies Market Report, Department of Energy (June 2011), http://eetd.lbl.gov/ea/ems/reports/lbnl-4820e.pdf. Wind power curtailment, or a reduction in wind power generation, "occurs for two primary reasons: 1) lack of available transmission during a particular time to incorporate some or all of the wind generation; or 2) high wind generation at times of minimum or low load, and excess generation cannot be exported to other balancing areas due to transmission constraints. In these instances, wind generation may be curtailed after other generation is running at minimum and imports reduced or curtailed as well." SARI FINK, WIND ENERGY CURTAILMENT CASE STUDIES MAY 2008 - MAY 2009, NATIONAL RENEWABLE ENERGY LABORATORY (October 2009), http://www.nrel.gov/docs/fy10osti/46716.pdf.

[225] Jeffrey Ryser, *ERCOT Sees Record Highs in Grid Uptake of Wind Generation, Using New Transmission*, GLOBAL POWER REPORT (Nov. 19, 2009).

[226] Eileen O'Grady, *UPDATE 1-FPL Power Line May Complicate Texas Wind Growth*, REUTERS (Oct. 28, 2009), http://in.reuters.com/article/2009/10/27/utilities-wind-idINN2725847720091027.

[227] Lynn Doan, *Texas Utilities, Consumers Skeptical of NextEra Offer of Transmission Line*, SNL POWER DAILY (Sep. 14, 2010).

[228] Lynn Doan, *Texas Utilities, Consumers Skeptical of NextEra Offer of Transmission Line*, SNL POWER DAILY (Sep. 14, 2010).

the offer, on January 24, 2011 the CREZ lines received a final CCN, with construction to begin in September 2012.[229]

Thus, Texas is an important federalism example for electric transmission as it comes closest to being able to act as an independent "laboratory of democracy" without collaborating with other states. That does not mean it always achieves maximum success. The state has been criticized for not engaging in sufficient long-term planning with regard to lines.[230] For instance, ERCOT has not forced project proposers to do joint planning on transmission. Moreover, the current projects in Texas are being built as 345kV lines when a more long-term, albeit more expensive, approach would call for 765kV lines.[231]

C. Regional Transmission Policy and Planning

As is clear from the discussion of federal and state regulation governing transmission and renewable energy policy, the federal government has encouraged states and utilities within states to form regional collaborations for transmission planning and electricity market operation and many states have done so. Although these regional organizations currently do not have siting authority and do not set policy for the states within them, they have begun to play a more central role in recent years in transmission planning and grid operation. This Section discusses the existing regional transmission organizations, the transmission challenges they are undertaking, and the extent to which they have made progress in addressing those challenges.

As an initial matter, in order to help manage transmission networks, FERC has promoted the formation of Independent System Operators (ISOs) and Regional Transmission Operators (RTOs). As noted earlier, in 1996, FERC issued Orders 888 and 889, which led to open access to the transmission system, and allowed for the formation of ISOs.[232] Order 888 stated "we believe that ISOs have great potential to assist us and the industry to help provide regional efficiencies, to facilitate economically efficient pricing, and, especially in the context of power pools, to remedy undue discrimination and mitigate market power."[233] In 1999, FERC issued Order 2000 and advanced the formation of Regional Transmission Operators.[234] "To further encourage RTO development, FERC directed transmission-owning utilities either to participate in an RTO or to explain their refusal to do so. Order 2000 did not require utilities to join RTOs; participation remained voluntary.[235]

There are six RTOs under FERC jurisdiction across the country.[236] Two of the RTOs are single-state organizations, the New York ISO (NYISO) and the California ISO

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[229] Big Hill to Kendall Line, Texas Crez Projects, http://www.texascrezprojects.com/page113462032.aspx (last visited July 17, 2011).

[230] [add citation]

[231] [add citation]

[232] FRED BOSSELMAN, ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 626 (3d ed. 2010).

[233] Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilites, 75 FERC ¶ 61,080, p. 52 (1996).

[234] Regional Transmission Organizations, 89 FERC ¶ 61,285 (1999).

[235] *Midwest ISO Transmission Owners v. F.E.R.C.*, 373 F.3d 1361, 1365 (D.C. Cir. 2004).

[236] Dworkin, et al., *supra* note _, at 540.

(CAISO).[237] There are also the PJM Interconnection RTO and the ISO New England in the east, the Midwest ISO in the Midwest, and Southwest Power Pool RTO in the Central U.S.[238] The Electric Reliability Council of Texas (ERCOT) is not under FERC jurisdiction, but it essentially functions as an ISO, with just a few DC connections to the Eastern and Western Interconnect. Despite the FERC orders encouraging formation of RTOs and ISOs, "some regions of the country have consistently opposed the RTO model, instead relying on in-state ISOs or on individual utility tariffs filings with FERC to govern transmission."[239] Most of the states in the west, with the exception of Texas, California, and those involved in MISO, are not part of an RTO or ISO.[240] These western states are, however, part of more loosely formed power organizations, including the Western Electricity Coordinating Council (WECC)[241] and the Western Area Power Administration (WAPA).[242]

This Section focuses specifically on the RTOs and other transmission planning organizations that cover more than one state in order to show how utilities and states have attempted to work together on a regional basis to plan for transmission and share costs, even if authority for the actual siting of transmission lines remains for now with the each individual state. Thus, this Section discusses (1) the Midwest Independent Transmission System Operator (MISO), which is the RTO covering a region of states including Minnesota, North Dakota, and Iowa;[243] and (2) the Western Electricity Coordinating

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[237] Dworkin, et al, *supra* note __, at 540.

[238] Dworkin, et al., *supra* note __, at 540.

[239] BOSSELMAN ET AL., *supra* note __, at 656.

[240] BOSSELMAN ET AL., *supra* note __, at 656. *See also* Electric Power Markets: National Overview, FERC, http://www.ferc.gov/market-oversight/mkt-electric/overview.asp (last visited August 8, 2011) (showing that the Northwest and Southwest regions, both of which fill out the Western Interconnection, do not have any ISOs or RTOs). As an example, Wyoming, Montana and parts of Oregon have transmission providers that are members of the Northern Tier Transmission Group. FAQ, Northern Tier Transmission Group, http://www.nttg.biz/site/ (last accessed August 8, 2011). *See also* David J. Hurlbut, *Multistate Decision Making for Renewable Energy*, 81 U. COLO. L. REV. 677, 697-98 (2010). In Oregon, Washington, and parts of western Montana, the majority of grid management is maintained by the federal nonprofit agency the Bonneville Power Administration. The grid managed by BPA contains mainly hydropower generation, and also contains 3000 MW of installed wind generation capacity. *See* Bonneville Power Administration, BPA Facts (2010) http://www.bpa.gov/corporate/about_BPA/Facts/FactDocs/BPA_Facts_2010.pdf. Another organization that fulfills a grid management role similar to an ISO or an RTO is the Western Area Power Administration (WAPA), which is a power marketing administration within the U.S. Department of Energy that has 17,000 miles of transmission lines which it operates and maintains. WAPA markets hydroelectric power across 15 states, including California, Minnesota, Montana, New Mexico, North Dakota, South Dakota, Texas, and Wyoming. Facts about Western, Western Area Power Administration, (last accessed Aug. 16, 2011) http://ww2.wapa.gov/sites/western/newsroom/FactSheets/Pages/factsabout.aspx. Further, there are other non-RTO organizations which actively work to plan interstate transmission line construction projects, such as the Western Governors' Association (WGA). *See* Western Renewable Energy Zones - Phase 1 Report, Western Governors' Association, (2009) http://www.westgov.org/rtep/219.

[241] *See* WECC, 2011, http://www.wecc.biz/Planning/Pages/default.aspx.

[242] *See* Facts About Western, Western Area Power Administration, http://ww2.wapa.gov/sites/western/newsroom/FactSheets/Pages/factsabout.aspx.

[243] Corporate Information, MISO, (June 2011) https://www.midwestiso.org/Library/Repository/Communication%20Material/Corporate/Corporate%20Fact%20Sheet.pdf.

Council (WECC) and Western Area Power Administration (WAPA).[244] Although ERCOT in Texas and CAISO in California serve similar transmission planning roles, they operate wholly within a single state and thus do not serve as examples of state collaboration for region-wide transmission planning.

1. MISO

MISO applied for and was granted status as an RTO in December 2001.[245] As the FERC order granting RTO status stated, "a properly formed RTO in the Midwest will greatly benefit the public interest by enhancing the reliability of the Midwest electric grid and facilitating and enhancing competition."[246] MISO covers portions of 13 states and Manitoba.[247] As of June 2011, MISO was comprised of 35 transmission owning members, including Xcel Energy (through its wholly owned subsidiary Northern States Power Company), Ameren, Mid-American, and Great River Energy.[248] On June 20, 2011, MISO set a record demand peak of 103,246 MW, surpassing the previous record set in 2006.[249] In total, the MISO footprint serves over 40 million people.[250] Coal is the most prominent fuel source in the MISO region, but over 10,000 MW of wind is installed in the MISO area.[251] In 2009 an estimated 2.2% of wind generation was curtailed, increasing to 4.4% curtailed in 2010 in the MISO footprint.[252]

Although MISO cannot itself adopt or impose an RPS, many of its members do; while MISO does not have the ability to site transmission lines, it "recognized that implementing RPSs would require regionally compliant transmission portfolios that could continue to deliver wholesale energy at the lowest possible total cost."[253] The Upper Midwest

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[244] *See supra* notes __ - __.

[245] 97 FERC ¶ 61, 326, (December 20, 2001); *see also* 103 FERC ¶ 61,169 (May 14, 2003) (denying rehearing of the December 20, 2001 order granting RTO status to MISO).

[246] 97 FERC ¶ 61, 326, (December 20, 2001)

[247] Annual Meeting Addresses Energy Challenges, MISO, (Apr. 20, 2011) https://www.midwestiso.org/AboutUs/MediaCenter/PressReleases/Pages/AnnualMeetingAddressesEnergyChallenges.aspx. This includes all or parts of Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Montana, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. *See* MISO Corporate Information, MISO, (June 2011) https://www.midwestiso.org/Library/Repository/Communication%20Material/Corporate/Corporate%20Fact%20Sheet.pdf.

[248] Midwest ISO: Members by Sector, MISO (June 2011) https://www.midwestiso.org/Library/Repository/Communication%20Material/Corporate/Current%20Members%20by%20Sector.pdf; Subsidiaries, Xcel Energy, http://www.xcelenergy.com/About_Us/Our_Company/Governance/Subsidiaries (last visited August 1, 2011), https://www.midwestiso.org/Library/Repository/Procedure/MISO%20Reliability%20Plan.pdf.

[249] New Peak Demand Record Set in MISO Region, MISO Press Release (July 20, 2011), https://www.midwestiso.org/AboutUs/MediaCenter/PressReleases/Pages/NewPeakRecordSetinMISORegion.aspx.

[250] MISO Corporate Information, MISO, (June 2011) https://www.midwestiso.org/Library/Repository/Communication%20Material/Corporate/Corporate%20Fact%20Sheet.pdf.

[251] MISO Corporate Information, *supra* note __.

[252] Wiser & Bolinger, 2010 Wind Energy Market Report, at p 54.

[253] Regional Generation Outlet Study, MISO, https://www.midwestiso.org/Planning/Pages/RegionalGenerationOutletStudy.aspx (last visited August 1, 2011).

Transmission Development Initiative was a sub-regional MISO planning effort initiated by the governors of Iowa, Minnesota, North Dakota, South Dakota and Wisconsin to identify renewable energy zones (REZs) and associated transmission needs in the Upper Midwest.[254] The creation of REZs is significant because they were approved by each state and thus allowed MISO to engage in long-term planning to zones that already had state support. Outputs from this study, and analysis of other MISO state RPS goals were then inputs in the MISO 2009 Regional Generation Outlet Study. The goal was to "[d]evelop regional transmission system(s) to accompany, at a minimum, existing renewable portfolio standards."[255] The project was led by MISO, and included the "assistance of state regulators and industry stakeholders."[256] The study was completed in phases, with Phase I "concentrate[ing] on the transmission design alternatives for the states in the western part of the MISO (North and South Dakota, Minnesota, Wisconsin, Iowa and Illinois)."[257] Phase II expanded on this, looking at "renewable energy requirements for the entire MISO footprint, resulting in the need for an exhaustive transmission plan."[258] The final report, incorporating both near-term and 20-year time horizons was issued in November 2010 and identified three transmission expansion scenarios that "meet respective state Renewable Portfolio Standards (RPS) requirements within the Midwest ISO footprint."[259] Each of these scenarios developed different grid architectures, one expanding the existing 345kV high voltage network and another laying out a 765 kV grid.

Also in 2010, MISO proposed a Multi-Value Project (MVP) pricing model to FERC, which was designed in part to encourage investment in transmission by facilitating the ability of investors to recoup costs.[260] After consideration, FERC approved the MVP model in December 2010 and the MISO Board approved the projects in December 2011.[261] The

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[254] David Boyd, Upper Midwest Transmission Development Initiative, Minnesota Public Utilities Commission

Chairman, presentation given at the NARUC Electricity Committee Meeting February 16, 2009, http://www.narucmeetings.org/Presentations/Boyd.pdf

[255] RGOS Phase I: Process Overview, MISO (March 14, 2009) https://www.midwestiso.org/_layouts/MISO/ECM/Redirect.aspx?ID=17457.

[256] Regional Generation Outlet Study, MISO, p. 1 (November 19, 2010) https://www.midwestiso.org/Library/Repository/Study/RGOS/Regional%20Generation%20Outlet%20Study.pdf.

[257] Regional Generation Outlet Study, MISO, (December 2009) https://www.midwestiso.org/_layouts/MISO/ECM/Redirect.aspx?ID=17653.

[258] Regional Generation Outlet Study, MISO, https://www.midwestiso.org/Planning/Pages/RegionalGenerationOutletStudy.aspx (last visited August 1, 2011).

[259] Regional Generation Outlet Study, MISO, p. 1 (November 19, 2010) https://www.midwestiso.org/Library/Repository/Study/RGOS/Regional%20Generation%20Outlet%20Study.pdf.

[260] Midwest Independent Transmission System Operator, Inc. and the Midwest ISO Transmission Owners, Docket No. ER10-____-000, Midwest ISO (July 15, 2010), https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf.

[261] 133 FERC ¶ 61,221 (2010); MISO, News, *MISO Board Approves 215 New Transmission Projects*, Dec. 8, 2011 (discussing approval of 215 new transmission infrastructure projects, including 16 new MVPs), at https://www.midwestiso.org/AboutUs/MediaCenter/PressReleases/Pages/MISOBoardApproves215NewTransmissionProjects.aspx.

pricing model allows regionally oriented projects to have their costs allocated across the MISO region on a postage-stamp (load-ratio share) basis.[262] To be considered for MVP status, a proposed project either must: (1) be developed through MISO's transmission expansion planning process for the purpose of meeting various energy policy laws or mandates; (2) provide multiple economic benefits to multiple regions, while the project's total economic benefits are greater than the total economic costs; or (3) address an issue related to a regional reliability standard, while the project's total economic benefits are greater than the total economic costs.[263] In creating a new cost allocation methodology for MVP projects, "Midwest ISO projects that the MVP starter projects developed within the first 5 to 10 years following approval of the proposed MVP cost allocation methodology will generate between $400 million to $1.3 billion in aggregate annual adjusted production cost savings, spread almost evenly across all Midwest ISO Planning Regions."[264]

One of MVP projects is a CapX2020 line described in Part II.B.1.[265] This will carry with it a huge financial benefit for the utilities proposing the CapX2020 lines, for the approval of the Brookings Line as an MVP project means that construction costs of more than $600 million will be spread across all utilities in MISO.[266] This would likely leave less than $100 million of the bill to be paid directly by the CapX2020 utilities, which make up approximately 14 percent of MISO's energy production.[267] With respect to this project, the allocation of cost is a particularly important issue, and in May of 2010 the CapX2020 utilities informed the Minnesota Public Utilities Commission that it would be delaying construction by two years due to concerns of cost allocation.[268]

Not all parties are happy with FERC's approval of the MVP model.[269] Some state commissions and MISO itself have argued that the rule is not broad enough and should

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[262] Midwest Independent Transmission System Operator, Inc. and the Midwest ISO Transmission Owners, Docket No. ER10-____-000, Midwest ISO, p. 2 (July 15, 2010), https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf. Essentially what this means is that the costs of the project are allocated to the utilities in the MISO region based on the utilities' percentage of the total energy load. *Id*. "Moreover, recognizing the year-round benefits of such projects, their costs will be recovered based on system usage." *Id.*

[263] Midwest Independent Transmission System Operator, Inc. and the Midwest ISO Transmission Owners, Docket No. ER10-____-000, Midwest ISO, pp. 21-24 (July 15, 2010), https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf.

[264] Midwest Independent Transmission System Operator, Inc. and the Midwest ISO Transmission Owners, Docket No. ER10-____-000, Midwest ISO (July 15, 2010), https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf

[265] Transmission Expansion Plan 2010, Midwest ISO, p. 264 (2010) https://www.midwestiso.org/Library/Repository/Study/MTEP/MTEP10/MTEP10%20Report.pdf.

[266] Bob Gieger, MISO Cost-allocation Formula Could save CapX2020 Utilities $600M on Power Line, (July 17, 2010) http://www.allbusiness.com/energy-utilities/utilities-industry-electric-power/14843766-1.html.

[267] Bob Gieger, *supra* note __.

[268] Bob Gieger, *supra* note __.

[269] Many Players in MISO Join Challenge of MVP Allocation, RESTRUCTURING TODAY (January 19, 2011) http://www.restructuringtoday.com/public/12883.cfm?sd=2; *see also* FERC Hears from MISO Members Unhappy with MVP, RESTRUCTURING TODAY, (January 18, 2011) http://www.restructuringtoday.com/public/12871print.cfm.

allow costs to be passed on to neighboring RTOs as well.[270] Specifically, the concern is that the eastern PJM RTO will use MISO's wind energy to meet its members' RPS goals, and as a result should be forced to pay for the benefit of utilizing new transmission lines to reach those wind resources.[271] On the other hand, Michigan interest groups have argued that the rule unfairly imposes costs for which Michigan utilities will see little benefit.[272] Specifically, these groups contend that "Michigan's renewable portfolio standard specifies that it has to be met with in-state renewables, thus it will get nothing out of lines designed to meet other jurisdictions' targets."[273] Furthermore, "Michigan is on two peninsulas and the lower is electrically islanded from the rest of MISO, meaning its customers will get little-to-no benefit from MVP lines elsewhere."[274]

Additionally, the Illinois Commerce Commission, along with the utility Exelon, claimed that the new rule suffers from the same deficiencies as a similar cost sharing method the PJM RTO had implemented.[275] That rule, which had also been approved by FERC, established that "[f]or 'backbone' transmission projects larger than 500 kV– that is, the proposed lines with the greatest capability to move large amounts of electricity – costs would be socialized throughout the PJM Interconnection (i.e., all customers within PJM would pay a portion of the costs of the facilities, regardless of their location relative to where the upgrades were made, on the assumption that all customers would benefit from these 'backbone' upgrades)."[276] In 2007, the U.S. Court of Appeals for the Seventh Circuit struck down the PJM rule, holding that "FERC is not authorized to approve a pricing scheme that requires a group of utilities to pay for facilities from which its members derive no benefits, or benefits that are trivial in relation to the costs sought to be shifted to its members."[277] While the court acknowledged that with large scale reliability upgrades, the risk of system wide failure is reduced and thus it is likely that all utilities will see at least some incremental benefit, without any such quantification or analysis the court found it was likely that this small benefit was grossly disproportionate to the allocated costs.[278]

In contrast to PJM's automatic pro rata cost sharing for large reliability upgrades, MISO's Multi-Value Project methodology attempted "to ensure fair allocation of the cost to the beneficiaries of a regionally beneficial transmission investment."[279] The approved 17

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[270] Many Players in MISO Join Challenge of MVP Allocation, *supra* note __; *see also* FERC Hears from MISO Members Unhappy with MVP, *supra* note __.

[271] Many Players in MISO Join Challenge of MVP allocation, *supra* note __; *see also* FERC Hears from MISO Members Unhappy with MVP, *supra* note __.

[272] Many Players in MISO Join Challenge of MVP Allocation, *supra* note __.

[273] Many Players in MISO Join Challenge of MVP Allocation, *supra* note __.

[274] Many Players in MISO Join Challenge of MVP Allocation, *supra* note __.

[275] Many Players in MISO Join Challenge of MVP Allocation, *supra* note __; *see also* FERC Hears from MISO Members Unhappy with MVP, *supra* note __.

[276] Stan Kaplan, *Electricity Transmission Cost Allocation*, CONGRESSIONAL RESEARCH SERVICE (April 19, 2010).

[277] Illinois Commerce Comm'n v. FERC, 576 F.3d 470, 476 (7th Cir. 2009).

[278] Illinois Commerce Comm'n v. FERC, 576 F.3d 470, 476 (7th Cir. 2009) ("Because the transmission lines in PJM's service region are interconnected, a failure in one part of the region can affect the supply of electricity in other parts of the network. So utilities and their customers in the western part of the region could benefit from higher-voltage transmission lines in the east, but nothing in FERC's opinions in this case enables even the roughest of ballpark estimates of those benefits.").

[279] 2010 Annual Report, Midwest ISO, p. 12, *available at* https://www.midwestiso.org/_layouts/miso/ecm/redirect.aspx?id=99072.

MVP transmission line projects are spread across the entire region and bundled together to ensure that the benefits of the total portfolio accrue pro rata across the region. Furthermore, as opposed to the PJM cost sharing method which looked only at reliability benefits, MISO explicitly considered additional benefit areas such as "advancing state and federal energy public policies, reductions in production costs and losses, reduced capacity requirements, and increased reliability, that accrue broadly to customers across the Midwest ISO region."[280] Estimating benefits across the region is an inexact science, but even the Seventh Circuit acknowledged that precision isn't necessary, only an effort to align cost and benefits.[281] As Judge Posner noted:

> We do not suggest that the Commission has to calculate benefits to the last penny, or for that matter to the last million or ten million or perhaps hundred million dollars. . . . If it cannot quantify the benefits to the midwestern utilities from new 500 kV lines in the East, even though it does so for 345 kV lines, but it has an articulable and plausible reason to believe that the benefits are at least roughly commensurate with those utilities' share of total electricity sales in PJM's region, then fine; the Commission can approve PJM's proposed pricing scheme on that basis.[282]

Therefore, in its effort to correlate costs and benefits, and through its findings to that effect,[283] the MISO's MVP pricing methodology may be more defensible under the Seventh Circuit's cost/benefit analysis.

2. Western Electricity Coordinating Council (WECC) and Western Area Power Administration (WAPA)

Unlike the Midwestern states that make up MISO, the majority of states in the Western Interconnect do not belong to an organized market, but are loosely joined within the Western Electricity Coordinating Council (WECC).[284] In 2009, WECC was awarded $14.5 million from the American Recovery and Reinvestment Act to use for transmission planning across the Western Interconnect, comprised of all or part of 14 states (along with the Canadian Provinces of Alberta and British Columbia and Northern Baja Mexico).[285] Managed by the Transmission Expansion Planning Policy Committee (TEPPC), this project will allow the WECC region to assess future transmission needs and engage in stakeholder planning and create both 10 and 20 year transmission plans.[286] The WECC also serves at the umbrella organization for many sub-

[280] Midwest Independent Transmission System Operator, Inc. and the Midwest ISO Transmission Owners, Docket No. ER10-____-000, Midwest ISO , p. 13-14 (July 15, 2010), https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf.

[281] *Illinois Commerce Comm'n v. FERC*, 576 F.3d 470, 477 (7th Cir. 2009).

[282] *Id.*

[283] Midwest Independent Transmission System Operator, Inc. and the Midwest ISO Transmission Owners, Docket No. ER10-____-000, Midwest ISO (July 15, 2010), https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf

[284] WECC, 2011, http://www.wecc.biz/Planning/Pages/default.aspx.

[285] WECC, 2011, http://www.wecc.biz/Planning/Pages/default.aspx.

[286] WECC, 2011, *supra* note __.

regional transmission planning efforts within the Western Interconnection.[287] WECC is responsible for ensuring that the electric power system is reliable within the Western Interconnect and that transmission access is fair. WECC has worked with the Western Governors Association in 2009 to identify "Western Renewable Energy Zones" and to work with stakeholders to identify transmission needs for the region.[288] This report examined technological potential for wind, solar, biomass, geothermal, and hydropower across the Western region. [289]

Another organization that fulfills a grid management role similar to an ISO or an RTO is the Western Area Power Administration (WAPA), which is a power marketing administration within the U.S. Department of Energy.[290] WAPA markets hydroelectric power across 15 states, including California, Minnesota, Montana, New Mexico, North Dakota, South Dakota, Texas, and Wyoming.[291] Additionally, WAPA has 17,000 miles of transmission lines which it operates and maintains.[292] In its 2010 annual report, WAPA highlighted the need for new transmission construction to facilitate renewable energy.[293] Although the planning process for these lines does not appear to be as involved as it is for MISO, there is a list of lines proposed as transmission construction projects.[294]

D. Summary

As shown in this Part, state policy governing renewable energy and transmission siting and construction, as well as the corresponding lack of significant federal policy, is having a major influence on where and how transmission is built and which projects are viable. Although FERC has identified parts of the eastern United States as having the most critical need for additional transmission infrastructure, the major projects to develop and connect renewable resources are being built further west, where policies in several states have identified a need for transmission infrastructure to develop renewable resources. Moreover, certain RTOs and ISOs at the regional level, particularly MISO, have been very proactive about integrating state renewable energy policy into their planning processes.

With these state and regional examples in mind, Part III now highlights the challenges we face in expanding the grid and incorporating renewable energy in light of the significant authority that exists at the state level for siting and permitting and the limited authority that exists at the federal level. Part III also explores some policy options at the federal, regional, and state level for addressing these challenges.

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[287] The sub-regional groups include the California Independent Service Operator (CAISO), Sierra Subregional Planning Group (SSPG), Southwest Area Transmission (SWAT), Colorado Coordinated Planning Group (CCPG), Northern Tier Transmission Group (NTTG), Columbia Grid, British Columbia Transmission Corporation (BCTC), and Alberta Electric System Operator (AESO).

[288] Western Governors Association, Western Renewable Energy Zones, 2009, http://www.westgov.org/rtep/219.

[289] Western Governors Association, *supra* note __, at 19.

[290] Facts About Western, Western Area Power Administration, http://ww2.wapa.gov/sites/western/newsroom/FactSheets/Pages/factsabout.aspx.

[291] *Id.*

[292] *Id.*

[293] Western Area Power Administration, Fiscal Year 2010 Annual Report, at http://ww2.wapa.gov/sites/western/Pages/default.aspx.

[294] *Id.*

III. FEDERAL, STATE, AND REGIONAL POLICY OPTIONS

A review of the various state policies and transmission projects along with the development of regional RTOs shows that RTOs, particularly MISO, have made major steps in planning and proposing the types of interstate transmission lines needed to bring renewable energy, particularly wind energy, from more remote areas in one state to population centers in that state and in neighboring states. While Texas is an example of a state that, because it is an electricity island, can more easily decide to build transmission lines to support its state renewable energy policy, MISO is an example of a multi-state RTO that has taken major steps to integrate the RPS and other renewable energy goals of its member states into transmission planning. Still, the process is slow, and cost allocation disputes over regional lines have been a huge barrier to planning and implementation. Moreover, a review of federal, state, and regional authority over transmission siting shows that most authority over siting and transmission line need approval still rests with the states. This makes it difficult to plan and build regional transmission lines and also gives the federal government no ability to influence the siting of lines in areas where states have been reluctant to site such lines as a result of stakeholder opposition. Although EPAct 2005 and the FERC rules regarding NIETCs and federal backstop siting authority were an effort to address this concern, courts have rejected FERC's efforts to exercise this authority. Thus, additional federal authority as well as action at the state and regional level may be necessary to facilitate the construction of transmission lines to support renewable energy development. This Part sets forth some options and for new siting and planning policies that would help break down some of these barriers and also discusses the critical issue of cost allocation for regional transmission lines.

A. Federal, Regional, and State Siting Options

The question of how to site additional interstate transmission lines to transport renewable energy from resource-rich states to population centers is front and center as politicians, regulators, environmentalists, renewable energy advocates, the renewable energy business community, utilities, and other stakeholders consider how best to develop these resources, particularly wind. None of these groups need to write on a completely clean slate. Instead, there are models that exist for increased federal siting authority, existing tools for increased regional authority, and state-level models that can allow more individual states to take the lead to create a more hospitable forum for merchant transmission and other development. Ultimately, we conclude that complete federal preemption of state siting authority for transmission lines is simply not politically feasible at the current time, and will not be unless and until the nation has a major transmission crisis with significant blackouts. While such a crisis may happen, in the absence of one, we favor (1) a "process preemption approach" using the current federal model for siting cell phone towers; or (2) movement toward regional collaborations with an ultimate transfer of at least some state siting authority to regional organizations through interstate compacts or other legal mechanisms. Each of these options are discussed below.

1. Federal Preemption of State Siting Authority

Clean energy advocates as well as some state utility regulators have looked to federal preemption of state siting authority as a way to break down current barriers to developing interstate transmission lines to meet state renewable energy goals. An obvious potential model is the federal structure in place for interstate national gas pipelines, where FERC has served as the primary siting authority for over 60 years. Congress passed the Natural Gas Act (NGA)[295] in 1938, stating, "[t]he business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and sale thereof in interstate and foreign commerce is necessary in the public interest."[296] The process for federal siting of interstate natural gas pipelines involves acquiring a Certificate of Public Convenience and Necessity from FERC, which then grants the pipeline owner eminent domain authority.[297] This federal authority is noticeably absent in the realm of electricity transmission siting, with predicable consequences:

> If the FERC had not possessed and exercised the power to authorize expeditious construction and expansion of gas transportation capacity, gas service would be much more expensive and less reliable than it now is in many parts of the country. That is the unfortunate result we can expect in the electricity market, unless we change the present legal environment with respect to construction and expansion of transmission lines.[298]

Beyond the uncertain "backstop" authority Congress granted FERC in EPAct 2005 for transmission lines, Congress has declined to expand FERC authority over the siting of transmission lines, choosing instead to leave this authority with the states. Although members of Congress have introduced bills in recent sessions to strengthen FERC's backstop authority in response to the judicial decisions limiting that authority under EPAct 2005, passage of any of these bills is unlikely at the present time.[299]

Despite the reluctance of Congress to increase federal siting authority for transmission lines, it has been willing to expand such federal authority in recent years in other areas where it apparently saw a greater need to override state siting obstacles. Notably, although FERC has long had authority to site natural gas pipelines, state and local governments have traditionally

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[295] 15 U.S.C. § 717 (2006).

[296] Donald H. Gaucher, *Federal Jurisdiction Over Natural* Gas, 1 HOUS. L. REV. 29, 31 (1963-1964).

[297] "A pipeline operator cannot engage in the transportation or sale of natural gas, or service, construct, extend, or acquire a natural gas pipeline without obtaining a certificate of public convenience and necessity from the FERC. The FERC will issue such a certificate only if required by the present or future public convenience and necessity. The FERC may impose conditions on the certificate and has the power to determine the service area to be covered. Perhaps the most valuable tool in the [Natural Gas Act] is the right of eminent domain granted to the holder of a certificate of public convenience and necessity. These provisions from Section 7 of the [Natural Gas Act], combined with Section 4 (rates and charges) and Section 5 (fixing rates and charges), have led the courts to repeatedly interpret the [Natural Gas Act] as providing for exclusive and preemptive federal siting of interstate natural gas pipelines." Robert R. Nordhaus & Emily Pitlick, *Carbon Dioxide Pipeline Regulation*, 30 ENERGY L.J. 85, 88-89 (2009); 15 U.S.C. § 717f(c)-(h) (2006) (internal quotation marks omitted).

[298] Richard J. Pierce, Jr., *The State of the Transition to Completive Markets in Natural Gas and Electricity*, 15 ENERGY L.J. 323, 334 (1994).

[299] *See supra* note __ and accompanying text (discussing unsuccessful efforts by Congress to expand federal authority).

assumed authority over siting liquefied natural gas (LNG) terminals. LNG terminals receive shipments of LNG from foreign sources and regasify, store, and prepare the natural gas for distribution in domestic pipelines.[300] As a result of local and state opposition to the siting of such terminals,[301] Congress, in EPAct 2005, granted FERC exclusive authority to site the terminals.[302] As Professor Bill Buzbee noted, "[p]reviously, siting decisions for dangerous or large industrial facilities had first and foremost been ruled by state and local governments. The Energy Act turned the hierarchy upside down, replacing state and local [liquefied natural gas] siting choice with a commenting role in a siting decision now made by the Federal Energy Regulatory Commission (FERC)."[303] EPAct 2005 preempts all state or local laws, including those that require more stringent standards for siting natural gas facilities.[304] Congress relied on its Commerce Clause power to preempt state authority and declared that "the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest . . . ."[305] In EPAct 2005, Congress also streamlined the process for reviewing FERC's natural gas terminal siting decisions by granting the federal Court of Appeals (in whichever circuit the facility is located) exclusive jurisdiction.[306]

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[300] Christopher M. Crane, *State Authority in Siting of Liquefied Natural Gas Import Terminals*, 14 BUFFALO ENTL. L. J. 1, 4 (2006).

[301] "Energy infrastructure raises unique concerns, specifically in the post-September 11 environment. As a result, [liquefied natural gas] has engendered huge opposition in many of the communities in which it has been proposed and those communities have methods by which they can negatively impact the review and regulatory processing of [liquefied natural gas] terminals. The primary tools available to [liquefied natural gas] opposition are the powers, embedded in various federal and state laws, which the states have to affect [liquefied natural gas] terminal siting. Aware of the potential delay caused by some of these tools and recognizing that states may react to satiate local opposition, Congress passed, and the President signed, the Energy Policy Act of 2005." Jacob Dweck, David Wochner, & Michael Brooks, *Liquified Natural Gas (LNG) Litigation After the Energy Policy Act of 2005: State Powers in LNG Terminal Siting*, 27 ENERGY L.J. 473, 474 (2006). *See also* Joan M. Darby, Janet M. Robins & Beth L. Webb, *The Role of FERC and the States in Approving and Siting Interstate Natural Gas Facilities and LNG Terminals after the Energy Policy Act of 2005 – Consultation, Preemption and Cooperative Federalism*, 6 TEX. J. OIL GAS & ENERGY L. 335, 336 (2010).

[302] Energy Policy Act of 2005, Pub. L. No. 109-58, §§311, 313, 199 Stat. 594 (2005), codified at 15 U.S.C. § 717b (2006).

[303] William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547, 1553 (2007).

[304] EPAct did, however, carve out a participatory role for the states in siting natural gas terminals. "Section 311(c)(1) amends [Natural Gas Act] section 3 to provide FERC exclusive authority to review applications "for the siting, construction, expansion, or operation of an LNG terminal." Section 311(c)(2) reserves states' right to administrate the [Coastal Zone Management Act], [Clean Air Act], and [Clean Water Act]. EPAct 2005 requires FERC to implement a "pre-filing" procedure for terminal applications which encourages applicant cooperation with state and local officials. States must designate an agency to consult with FERC on state and local safety considerations during application review. The state agency may provide an advisory report to FERC on safety issues, to which FERC must respond. In addition, states may conduct safety inspections of operating LNG terminals to evaluate facility conformance with federal regulations. The LNG terminals emergency response plan must include consultation with state and local officials . . . EPAct 2005 provides for a minimum of three "federal-state" forums to foster dialogue and promote public education on federal and state siting and permitting processes, federal safety regulations, and response strategies." Christopher M. Crane, *State Authority in Siting of Liquefied Natural Gas Import Terminals*, 14 BUFF. ENVTL. L.J. 1, 32-33 (2006).

[305] 15 U.S.C. §717(a) (2006); Gregory J. Rigano, *The Solution to the United States' Energy Troubles is Blowing in the* Wind, 39 HOFSTRA L. REV. 201, 229 (2011).

[306] Gregory J. Rigano, *The Solution to the United States' Energy Troubles is Blowing in the* Wind, 39 HOFSTRA L. REV. 201, 231 (2011). *See also* Jacob Dweck, David Wochner, and Michael Brooks, *Liquefied Natural Gas (LNG) Litigation After the Energy Policy Act of 2005: State Powers in LNG Terminal Siting*, 27 ENERGY L.J. 473, 474 (2006). "The EPAct 2005 amended the Natural Gas Act of 1938 (NGA) to streamline the process for approving

Adopting a federal preemption model to overcome transmission congestion and facility limitations that currently hobble renewable energy and transmission development could involve granting FERC full siting authority over new high voltage transmission assets needed to allow states to meet their RPS targets. FERC would be a one-stop shop, acting as the lead agency for coordinating all requisite authorizations and reviews needed to plan and construct new transmission lines. Furthermore, legislation could grant renewable energy developers first priority for connecting to the grid and long-term capacity rights for transmission improvements needed to allow states to meet their RPS targets.[307]

The likelihood that Congress would completely or even significantly strip states of siting authority for interstate transmission lines as it did for interstate natural gas pipelines appears remote at best, based on differences in the political climate between 1938 and now, as well as differences in the regulatory structure governing pipelines in 1938 and transmission lines at the current time. The NGA came on the heels of several years of significant New Deal legislation, including the National Industrial Recovery Act of 1933 and the National Labor Relations Act of 1935,[308] the establishment of the Securities and Exchange Commission in 1934,[309] the Social Security Act of 1935,[310] and the Fair Labor Standards Act of 1938.[311] The political climate that led to the New Deal was spurred by the Great Depression and a new voting generation that had grown up experiencing the "abuses of industrialism." [312] Unlike the most recent presidential and congressional elections, which were very close, Franklin Roosevelt was reelected in a landslide in 1936 and the Congress enjoyed a majority of members who were aligned with the President.[313]

Throughout the 1930s, the focus of politics shifted away from state and local levels of government and emphasized new and significant federal regulation of markets and monopolies by both Congress and newly-created federal agencies.[314] The interstate natural

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natural gas projects, including LNG import terminals. The EPAct 2005 expressly provided the FERC with exclusive authority over applications to site, construct, and operate LNG terminals. It also provided a direct, expedited appeal to the U.S. courts of appeals from most agency decisions authorized under federal law, and authorized the FERC to create a binding schedule for agencies reviewing projects under the FERC's jurisdiction. To facilitate the process, the FERC is required to institute a prefiling process, consult states in the application process, and create a single consolidated record for appeals from all agency decisions."

[307] Matthew Slavin, Sustaingrüp, & Jason J. Zeller, *No Grid, No Gain: Untangling the Transmission Tie-up*, RENEWABLE ENERGY WORLD (Apr. 15, 2011), http://www.renewableenergyworld.com/rea/news/print/article/2011/04/no-grid-no-gain-untangling-the-transmission-tie-up.

[308] 15 U.S.C. § 703 (2006) (protecting collective bargaining rights for unions); 29 U.S.C. § 151 (2006) (prohibiting unfair labor practices).

[309] 15 U.S.C. § 78d (2006) (regulating the stock market to prevent abuses similar to those that led to the Great Depression).

[310] 42 U.S.C. § 301 (2006) (providing retirement and death benefits).

[311] 29 U.S.C. § 201 (2006) (requiring a minimum wage and overtime pay).

[312] Samuel Lubell, *The Roosevelt Coalition*, *in* THE NEW DEAL: ANALYSIS & INTERPRETATION 131 (Alonzo L. Hamby, ed. 1969).

[313] Lubell, *supra* note __, at 143.

[314] *See* Sidney M. Milkis, *New Deal Party Politics, Administrative Reform, and the Transformation of the American Constitution*, *in* THE NEW DEAL AND ITS LEGACY: CRITIQUE AND REAPPRAISAL 131 (Robert Eden ed. 1989); Hirman Caton, *Progressivism and Conservatism During the New Deal¸ in* THE NEW DEAL AND ITS LEGACY: CRITIQUE AND REAPPRAISAL 183 (Robert Eden ed. 1989). *See generally* Ellis W. Hawley, *The New*

gas industry was a relatively new industry in the 1930s, with the first long-distance pipeline built in 1931. By 1935, it was apparent that states were struggling to regulate interstate pipeline companies, particularly when it came to rates.[315] The Federal Trade Commission undertook an investigation of the industry and found discrimination, overcharging of customers, and "highhandedness against producers," who often had little choice regarding pipeline access.[316] In response, Congress passed the Natural Gas Act, which was designed to reduce exploitation by natural gas companies.[317]

The NGA was not, however, designed to strip states of their regulatory power.[318] Rather, it was intended to fill the regulatory gap that existed when gas passed from one state to another.[319] It was also designed to allow the federal government to encourage competition among pipelines.[320] "The congressional desire in enacting the [Natural Gas Act] was to establish a uniform system of regulation to assure an adequate, reliable, and reasonably-priced supply of natural gas for the entire nation."[321] As the Supreme Court has repeatedly declared, the NGA's purpose was 'to protect consumers against exploitation at the hands of natural gas companies.'"[322] By comparison, today's electric industry and its high-voltage, long-distance transmission lines have grown from local, decentralized companies, municipal utilities, or rural electric co-operatives into the sprawling electrical network of today. The technology and industry are well established and in large part regulated so as to protect consumers from natural monopolies.

On the other hand, one might still look to the more recent federal preemption of LNG terminal siting in 2005 as signs for hope of a transfer of state siting authority to the federal government. There too, however, significant differences exist. Federal preemption of LNG terminal siting has been a live issue since 1979, even though the transfer of siting authority did not take place until 2005. Since the 1970s, Congress has been entertaining the notion of establishing federal authority over siting LNG terminals due to confusion over the siting powers of states and various federal agencies, for safety reasons, and to ensure an adequate supply of natural gas.[323] As one commentator wrote in 1979, "[i]n recent years, a number of states have enacted restrictions on the siting of facilities for the importation of

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Deal and the Problem of Monopoly, *in* THE NEW DEAL: ANALYSIS & INTERPRETATION 73 (Alonzo L. Hamby, ed. 1969).

[315] John T. Miller, Jr., *Competition in Regulated Industries: Interstate Natural Gas Pipelines,* 47 GEO. L.J. 224, 230 (1958). *See also* Donald H. Gaucher, *Federal Jurisdiction Over Natural Gas*, 1 HOUS. L. REV. 29, 30 (1963).

[316] John T. Miller, Jr., *supra* note __, at 230.

[317] *Id.* at 231.

[318] Ralph Sargent, Jr., *Regulation of Natural Gas—Federal v. State*, 27 DENV. B.A. REC. 216, 228 (1950) (quoting Panhandle Eastern Pipeline Co. v. P.S.C., 332 U.S. 507, 517-18 (1947).

[319] Ralph Sargent, Jr., *supra* note __, at 228 (quoting Panhandle Eastern Pipeline Co. v. P.S.C., 332 U.S. 507, 517-18 (1947). *See also* Alfred E. McLane, *Jurisdiction of the Federal Power Commission Over Production and Gathering of Gas*, 28 TUL. L. REV. 343, 343 (1954).

[320] John T. Miller, Jr., *Competition in Regulated Industries: Interstate Natural Gas Pipelines,* 47 GEO. L.J. 224, 232 (1958). *See also* 15 U.S.C. § 717f(g).

[321] Rachel Clingman &Audrey Cumming, *The 2005 Energy Policy Act: Analysis of the Jurisdictional Basis for Federal Siting of LNG Facilities*, 2 TEX. J. OIL GAS & ENERGY L. 57, 72 (2007).

[322] Jane L. Bloom, *State Regulation of Liquefied Natural Gas Facilities Siting: A Case for Federal Preemption?*, 8 N.Y.U. R. LAW & SOCIAL CHANGE 7, 25 (1979) (quoting FPC v. Louisiana Power & Light Co., 406 U.S. 621, 631 (1972)).

[323] *See generally* Bloom, *supra* note __.

liquefied natural gas (LNG) within their borders. These restrictions have been challenged by gas distribution companies and by agencies of the federal government on the grounds that they inhibit interstate commerce and are preempted by federal regulations covering natural gas facilities."[324] Other potentially relevant differences include the increase in natural gas prices leading up to 2005 combined with ever-cheapening technology to regasify and store LNG.[325]

While one may argue that the challenges facing the transmission grid may soon be sufficiently significant as to require a similar response from Congress, we conclude that the situation must become much more dire than it already is for Congress to support such a massive transfer of authority from the states to the federal government. Federal legislation granting FERC the exclusive right to determine the need for and site interstate transmission lines would strip states of a regulatory power they currently possess. Given the differences in the nature of the electric transmission industry and the natural gas industry (both in 1938 and 2005), as well as the current political climate, it is unlikely that federal legislation along the lines of the Natural Gas Act or the new siting provisions for LNG terminals is a viable solution at the present time for addressing the inefficiencies associated with state authority for transmission line siting.

2. "Process Preemption" as a Middle Ground

Another option, however, is the model Congress has adopted for the siting of cell phone towers in the Telecommunications Act of 1996 (TCA).[326] Ashira Pelman Ostrow has discussed the current difficulty siting renewable energy projects (as opposed to transmission lines) and advocates for retaining a mix of federal and local control, known as "process preemption,"[327] or "cooperative federalism."[328] in siting processes. "Aggressive federal preemption regimes that exclude local decision makers from the siting process falter because local opposition, in contrast to local authority, cannot be preempted."[329]

She looks favorably upon the TCA's Telecommunications Siting Policy, which leaves siting authority in local hands, but constrains local decision-making and provides federal remedies for those who are denied approval. [330] Thus, the Telecommunications Siting Policy preempts the siting process but without disempowering local governments. The TCA was enacted with the twin goals of increasing competition in the telecommunications industry and expanding wireless service across the country.[331] Before passage of the TCA, local opposition to cell phone tower

[324] Bloom, *supra* note __.

[325] Sheila Slocum Hollis, Symposium, *Should We Site It Here? LNG, the Environment, and Federalism*, 2 ENVT'L & ENERGY L. & POL'Y J. 5, 6 (2007). Since the development of shale gas, of course, natural gas prices have fallen significantly.

[326] 47 U.S.C. § 322 (2006).

[327] Ashira Pelman Ostrow, *Process Preemption in Federal Siting Regimes*, 48 HARV. J. ON LEGIS. 289, 291 (2011).

[328] Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1048, 1054 (2009).

[329] Ostrow, *supra* note __, at 291.

[330] Salkin & Ostrow, *supra* note __, at 1053.

[331] Camille Rorer, *Can You See Me Now? The Struggle between Cellular Towers and NIMBY*, 19 J. NAT. RESOURCES & ENVTL. L. 213, 214-15 (2005)

siting often led to significant delays in permitting and construction of towers.[332] The Telecommunications Siting Policy's collaboration between federal and state decision making has led to the siting of tens of thousands of telecommunications facilities,[333] a dramatic increase that has contributed to the development of a national telecommunications network.[334] Ostrow notes that this structure's "hybrid federal-local framework" creates an inter-jurisdictional siting policy that balances national and local land use priorities and has encouraged local regulators to cooperate with land use developers.[335]

The TCA operates by balancing local concerns against broader national interests.[336] It prevents local authorities from outright banning facilities[337] and from discriminating among providers.[338] Authorities are required to respond to siting requests within a reasonable period of time and decisions must be in writing and supported by substantial evidence.[339] Last, a party who is prohibited from siting a facility may take its claim to a federal court, where the claim will be decided on an expedited basis,[340] thus increasing "the legitimacy, consistency, and public acceptance of controversial siting decisions."[341] Although states are somewhat constrained by the TCA, they may decide whether, where, and how to site facilities in accordance with local preferences.[342]

Even the TCA approach may be optimistic as a model for transmission siting authority given the current hostility to transferring any authority in this area from the states to the federal government. Nevertheless, it does present an approach that might streamline and make more uniform state processes in a way that would be helpful for interstate lines needing approvals in multiple states, while still leaving significant authority at the state and local levels.

Thus, there are some existing models of federal siting authority Congress could adopt or modify in order to encourage interstate transmission corridors for increased grid reliability and/or to encourage transport of renewable energy from resource-rich states to population centers. Significant support in Congress and among the public for such a solution, however, is unlikely until the country is faced with a significant transmission crisis, stranding investment in renewable energy and hindering the ability of the states to meet their policy goals. If and when that happens, Congress will likely look to these existing federal siting models for guidance. In the meantime, however, states, groups of

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[332] Salkin & Ostrow, *supra* note __, at 1088.
[333] Salkin & Ostrow, *supra* note __, at 1091.
[334] Ostrow, *supra* note __, at 292-93.
[335] Ashira Pelman Ostrow, *Process Preemption in Federal Siting Regimes*, 48 HARV. J. ON LEGIS. 289, 292-93 (2011).
[336] Salkin & Ostrow, *supra* note __, at 1082-83. *See also* ATC Realty, LLC v. Town of Kingston, 303 F.3d 91, 94 (2002).
[337] Salkin & Ostrow, *supra* note __, at 1093.
[337] Salkin & Ostrow, *supra* note __, at 1088.
[337] Salkin & Ostrow, *supra* note __, at 1091.
[338] Salkin & Ostrow, *supra* note __, at 1090.
[339] Salkin & Ostrow, *supra* note __, at 1093.
[340] Salkin & Ostrow, *supra* note __, at 1090.
[341] Ashira Pelman Ostrow, *Process Preemption in Federal Siting Regimes*, 48 HARV. J. ON LEGIS. 289, 293-94 (2011).
[342] Salkin & Ostrow, *supra* note __, at 1090.

states, and regional transmission organizations can use their own tools, if they wish, to encourage more effective interstate transmission development. These tools are discussed below.

3. Regional Siting Agencies

As noted earlier, although regional transmission organizations such as MISO are already engaged in interstate transmission line *planning*, the authority for actual *siting* of lines remains squarely with the states. There is an opportunity through the Energy Policy Act of 2005, however, to create regional transmission siting agencies through interstate compacts.[343] In EPAct 2005, Congress granted consent for three or more contiguous States to enter into an interstate compact, subject to approval by Congress, which would establish a regional transmission siting agencies to (1) determine need for future electric energy transmission facilities within those States; and (2) carry out the electric energy transmission siting responsibilities of those States. Under the law, the regional transmission siting agency would have authority to "review, certify, and permit siting of transmission facilities, including facilities in national interest electric transmission corridors (other than facilities on property owned by the United States)." FERC would have no authority to issue a permit for the construction or modification of an electric transmission facility within a State that is a party to a compact, unless the members of the compact are in disagreement and the Secretary makes certain findings.[344]

So far, no states have entered into such compacts but if states were to do so, it may allow for better and more efficient planning and construction of transmission lines, particularly regional transmission lines. Unfortunately, there are few successful models in this area for states to follow. In one notably example, the Low Level Radioactive Waste Policy Act of 1980 and its 1985 Amendments ("LLW Act"), Congress granted states power to site low level radioactive waste disposal facilities individually or through interstate compacts.[345] States entering into compacts were required to develop a siting plan with schedules and procedures for establishing a facility location and preparing a license application.[346] The states favored the legislation as a means of retaining autonomy over the siting process while overcoming existing obstacles to siting facilities on a state-by-state basis.[347] After the LLW Act's enactment, many states entered into compacts but the process resulted in no new waste facilities.[348] In the 1985 Amendments, Congress provided financial benefits to states that met a series of siting deadlines, imposed increased disposal

[343] Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, §216(i) (codified at 16 U.S.C.A. § 824p).

[344] Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, §216(i) (codified at 16 U.S.C.A. § 824p). To override a state compact, the states must disagree, there must be "notice and an opportunity for a hearing" (16 U.S.C.A. § 824p (i)(4)), and FERC must find that a State commission or other entity that has authority to approve the siting of transmission lines has withheld approval for more than one year or has conditioned its approval so the proposed line will not significantly reduce transmission congestion or is not economically feasible (16 U.S.C.A. § 824p (b)(1)(C)). This only applies to lines within an NIETC (just as FERC's general backstop siting authority does).

[345] *See* 42 U.S.C. §§ 2021b-2-21d; Ashira Pelman Ostrow, *Process Preemption in Federal Siting Regimes*, 48 HARV. J. LEGIS. 289, 314 (2011).

[346] *Id.* § 202e(e)(1)(B)(i).

[347] *See* Ostrow, *supra* note __, at 314.

[348] *Id.* at 314-15.

charges and restrictions on states that missed the deadlines, and required states that had not provided for disposal within a certain time period to "take title" to the waste, thus assuming liability for any associated damage.[349] In 1994, the U.S. Supreme Court found the "take title" provisions of the 1985 Amendments violated the Tenth Amendment to the U.S. Constitution and upheld the remainder of the statute.[350] Since that time, despite the existence of interstate compacts and the additional financial incentives provided in the 1985 amendments, states individually and collectively have been unable to site additional waste facilities, resulting in the large majority of nuclear waste being stored where it is produced, raising local environmental and public health concerns as well as national security concerns.[351]

One can certainly argue that transmission lines, while not generally welcome in a community, do not raise the same public health, environmental, and safety concerns as nuclear waste facilities. Nevertheless, the difficulty states have faced in siting transmission lines during the past decades does raise questions over whether an interstate compact approach will be effective without significant financial incentives or penalties.

Another limitation with the interstate compact framework in EPAct 2005 is that regional transmission siting agencies do not possess eminent domain authority. Thus, even if a regional transmission siting agency approved a project, it would still have to utilize state eminent domain authority to acquire easements from potential "holdouts." A better solution would be to vest federal eminent domain authority in the regional transmission siting agency, and streamline the siting process such that permits and approvals obtained through the siting process also confer the proposed line with eminent domain authority. This could potentially be a very strong solution, as it would allow for planning and siting authority to be concurrently possessed at the level where transmission facility management occurs, similar to what happens within Texas. It also would address more cleanly the "public need" of the line, as the public would be broadly defined to include an interstate market rather than a narrowly-defined intrastate market.

B. Cost Allocation Concerns

Underlying virtually all debates surrounding regulatory authority for siting interstate transmission lines is the question of cost allocation. Cost allocation, as former FERC Commissioner Joe Kelliher noted, is "almost a uniquely American issue."[352] While the United Kingdom has only one grid, and one owner,[353] the United States has "eight or 10 grids, eight or 10 large regional machines that have scores or hundreds of owners."[354] This

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[349] *Id.*; New York v. United States, 505 U.S. 144, 152-54 (1994); 42 U.S.C. §§ 202e(d)-(e).

[350] *New York*, 505 U.S. at 145.

[351] *See* Ostrow, *supra* note __, at 316-17.

[352] Former FERC Commissioner Kelliher Discusses New Transmission, Cost Allocation Rule, E&E News PM, (July 25, 2011) http://www.eenews.net.ezproxy.law.umn.edu/eenewspm/2011/07/25/archive/11?terms=Former+FERC+Commissioner+Kelliher+discusses+new+transmission%2C+cost+allocation+rule.

[353] *See* Scott Butler, UK Electricity Networks, Imperial College of Science Technology and Medicine, p. 32 (2001) http://www.parliament.uk/documents/post/e5.pdf (highlighting that National Grid is statutorily charged with maintaining UK's high voltage electricity grid).

[354] Former FERC Commissioner Kelliher Discusses New Transmission, Cost Allocation Rule, *supra* note __.

creates problems when there is an expansion on any single component of the grid with regard to power flow in other parts of the grid, and creates difficulties regarding cost allocation and pricing.[355] In the United Kingdom and parts of Europe, regulators have adjusted cost allocation structures so that the costs of new transmission are generally "socialized" on a "postage-stamp" basis, particularly for renewable energy-based projects.[356]

In the United States, the biggest challenge of transmission cost allocation arises in an interstate context. Although FERC has issued orders requiring Open Access Transmission Tariffs for transmission lines, it has largely left the implementation of cost allocation for new transmission lines to the regions. "Transmission cost allocation can be particularly contentious for multi-state transmission projects that cross more than one state, as the benefits of the proposed project may accrue unevenly to market participants."[357] Benefits may be hard to estimate, and some entities may feel that they are paying more for a line than they will gain in benefits.[358] Sometimes costs may be spread across a Regional Transmission Organization, but benefits might be conferred upon neighboring regions which do not have to pay.[359] In light of this, different regions in the United States have taken different approaches to allocating transmission costs for large scale transmission upgrades. Some simply have the project sponsor pay the upfront capital expenditure, and allow for transmission access charges to recoup the costs.[360] Others, such as PJM, have tried to argue that reliability benefits warrant cost sharing across a region, but courts remain unconvinced.

As a result of the different regional approaches to cost allocation, the United States has seen innovation in the field of regional pricing, with the most promising development being the recently approved MISO MVP plan. Building upon prior efforts by regions such as PJM to expand cost allocation across regional participants, MISO's MVP plan recognizes that benefits accrue not just due to reliability and economic impacts, but also due to the achievement of various state and regional policy goals and mandates (such as Renewable Portfolio Standards). By expressly considering such goals, MVP pricing attempts to move beyond historical methods of allocating costs and better align transmission line planning and cost allocation with state-level renewable energy policies. Although the full impact of MVP cost allocation remains to be seen, as the 17 "no regrets" renewable energy-bearing transmission lines begin construction, and with FERC's recent affirmation of the principles

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[355] Former FERC Commissioner Kelliher Discusses New Transmission, Cost Allocation Rule, *supra* note —.

[356] *See* Marcelino Madrigal & Steven Stoft, *Transmission Expansion for Renewable Energy Scale-Up: Emerging Lessons and Recommendations*, Energy and Mining Sector Board Discussion Paper No. 26, at 17-20, 105-107 (June 2011), at http://www.esmap.org/esmap/node/1296.

[357] SARI FINK ET AL., A SURVEY OF TRANSMISSION COST ALLOCATION METHODOLOGIES FOR REGIONAL TRANSMISSION ORGANIZATIONS, NATIONAL RENEWABLE ENERGY LABORATORY 2 (February 2011) http://www.nrel.gov/wind/systemsintegration/pdfs/2011/fink_transmission_cost_allocation.pdf.

[358] *See supra* Part II.C (discussing opposition in Michigan to transmission cost allocation as Michigan is remote as compared to the rest of the region and may only use in-state renewable energy sources to meet Michigan's RPS targets).

[359] *See supra* Part II.C (discussing the controversy surrounding FERC's order disallowing MISO from allocating transmission costs to neighboring PJM, despite potential transmission benefits accruing to PJM).

[360] *See supra* Part II.C.

in MVP in its order offering the cost allocation plan to other U.S. regions,[361] all indicators are that MVP pricing may be the best plan to date to facilitate equitable transmission line build out that will meet renewable energy needs.[362]

It should be noted, however, that potential legal challenges still face the new MVP pricing and FERC Order 1000, the strongest being that their allocation of costs are not commensurate with the benefits various market participants receive. Drawing upon the Seventh Circuit's opinion in *Illinois Commerce Comm'n v. FERC*, critics contend that the relationship between the benefits various transmission owners will receive and the costs they will bear is too attenuated, and courts will reject it. However, as Judge Posner noted, all that is required is "an articulable and plausible reason to believe that the benefits are at least roughly commensurate with those utilities' share of total electricity sales."[363] The MISO MVP project developed and conducted a detailed benefit-cost analysis to evaluate the state-level benefits of the new proposed lines.

As Jim Rossi has argued, the current state-by-state siting approval process raises its own cost allocation challenges.[364] When transmission siting is done on a state-by state basis and many state statutes direct state PUC's to consider the "need" for the line based on benefits only to in-state customers, it becomes extremely difficult politically, if not outright illegal, to site a line to export state power to nearby population centers.[365] While some states, like North Dakota, have long allowed out-of-state power needs to justify the siting of a new line in the state, other states such as Massachusetts, Mississippi, and Arizona have found to the contrary, explicitly rejecting certificates of need and eminent domain authority for such lines.[366] Moreover, as Ashley Brown and Jim Rossi have pointed out, to the extent states fail to separate the questions of (1) whether to site the line and (2) whether to pass the costs of the line on to ratepayers in the state, both regulators and the public will

[361] Additionally, under the new rule FERC is now "requiring that regional cost allocation be established outside of the RTO regions." Former FERC Commissioner Kelliher Discusses New Transmission, Cost Allocation Rule, E&E News PM, (July 25, 2011), at http://www.eenews.net.ezproxy.law.umn.edu/eenewspm/2011/07/25/archive/11?terms=Former+FERC+Commissioner+Kelliher+discusses+new+transmission%2C+cost+allocation+rule.

[362] Another potential model is the Southwest Power Pool's "highway/byway" approach to cost allocation that allows members to share cost of lines across the region. Under this approach, which FERC approved in 2010, costs are allocated according to the voltage of the new transmission facilities. Costs of facilities operating at 300 kilovolts (kV) and above are allocated 100 percent across the SPP region on a postage stamp basis. Costs of facilities operating above 100 kV and below 300 kV are allocated one-third on a regional postage stamp basis and two-thirds to the zone in which the facilities are located. The costs of facilities operating at or under 100 kV are allocated fully to the zone in which the facilities are located. *See* http://blog.climateandenergy.org/2010/06/17/ferc-approves-spp-highway-byway-cost-allocation-plan/.

[363] Illinois Commerce Comm'n v. FERC, 576 F.3d 470 (7th Cir. 2009). *See also* http://www.vnf.com/news-alerts-643.html.

[364] *See* Jim Rossi, *The Trojan Horse of Electric Power Transmission Line Siting Authority*, 39 ENVTL. L. 1015 (2009).

[365] *See* Rossi, *supra* note __, at 119-126. *See also* Richard J. Pierce, Jr., *Environmental Regulation, Energy, and Market Entry*, 15 DUKE ENVTL. L. & POL'Y FORUM, 167, 179-183 (2005) (discussing problem of states considering only in-state benefits in reviewing interstate transmission projects, leading to transmission bottlenecks across the country but particularly in the Northeast).

[366] *Id.* at 1022-26.

continue to resist approval of transmission lines designed primarily to provide power to out-of-state customers.[367]

This state-by-state approach also affects the selection of the transmission line size, the architecture of the grid, and ultimately, the ability to develop large-scale renewable energy. While larger 765 kV high voltage transmission lines are slightly more costly to build, they use less land as they are able to carry four times the electricity of 345 kV lines.[368] Gaining approval for infrastructure which can allow for additional expansion of renewable energy *beyond* the current policy mandates is difficult to justify at the state level. Thus, any efforts to increase interstate transmission to improve grid operation and promote the development and transport of renewable energy must include a significant emphasis on coming up with new approaches to cost allocation, starting with and, likely, going beyond the efforts described in this section.

CONCLUSION

Developing the electricity transmission infrastructure necessary to significantly increase renewable energy use in this country is a challenge of massive proportions. While the technological choices are well understood, it requires policy development and implementation on the state, regional, and federal level and encompasses all the legal and policy issues associated with renewable energy, energy policy, environmental protection, cost allocation, and basic infrastructure needs not just in one state or region of the country but on a national basis. Some states are rich in renewable resources while others are rich in population. Some states have developed more integrated and favorable policies for such change and others have resisted it. So far, Congress has refused to give FERC or any other federal agency the authority to override state obstacles to siting new transmission and FERC itself has not always used the tools it has to address the problem. As a result of these challenges, significant policy changes may be unlikely until the country or a region of the country is faced with a large-scale transmission crisis.

In this Article we have addressed the regional and state level challenges of planning, siting, and paying for large-scale transmission lines to support renewable energy development. How and if these decisions are made will affect the extent of future renewable energy on the grid and shape the ability of grid operators to integrate variable renewable resources into the electricity system. We leave an in-depth analysis of the challenges and emerging rules to integrate large amounts of variable renewable resources in to the electric system operation and electricity dispatch for a future paper. Instead, this Article highlights those efforts in Midwestern and Western states and explores how they may serve as models for increased collaboration between states as they realize the economic benefits and necessities of working together to create the transmission capacity to move renewable power from one state to another. In this way, states are once again serving as "laboratories of democracy" but to achieve success in the realm of interstate transmission they must do so cooperatively rather than independently.

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[367] *See* Ashley Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the "Public Interest" in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705, 726-28 (2010).

[368] A 345 kV system requires a right of way of about 150 feet, a 765 kV line a right of way of 200 feet, but the 765kV line is able to carry four times more electricity. TJ Smith, MISO, Personal Communication, November 22, 2011.