Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch

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INTRODUCTION

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

It is impossible to talk about developing renewable energy resources in the United States without also talking about developing electric transmission infrastructure. More specifically, 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, creating 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

1. Miriam Fischlein et al., *States of Transmission: Moving Towards Large Scale Wind Power*, ENERGY POL'Y (forthcoming 2013).

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, 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 get to market cost-effectively, and much of that depends on transmission.

In this Article, we consider federal, state, and regional policies governing transmission planning and siting and highlight the challenges and opportunities for further growth. We focus on wind rather than solar or geothermal resources because wind-based electric power generation has grown significantly in recent years. There are currently over 48,000 megawatts ("MW") of installed wind power, and that scale is beginning to have a demonstrable effect on transmission planning and decisions.[2] 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 these resources, however, requires multistate coordination for siting and building transmission lines and cooperation from regional transmission organizations or local utilities for integration with the grid. While not exhaustive, our analysis seeks to illustrate the different conditions and demands of wind development in those states. 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 impact on scenic and natural areas, endangered species, human health, and aesthetic resources. We recognize the importance of these issues in developing interstate transmission but do not expressly consider them in this analysis.

Current policies to encourage renewable energy at the federal and state levels will only be successful if accompanied simultaneously by policies to plan, site, build, and operate long-distance transmission lines that cross state and regional boundaries. However, in light of the

2. *Industry Statistics*, AM. WIND ENERGY ASS'N, http://www.awea.org/learnabout/industry_stats/index.cfm (last updated Aug. 6, 2012).

current regulatory regime, which consists of small, highly devolved decisionmaking infrastructures, there are significant obstacles associated with creating large-scale systems that span many jurisdictions. Some of these challenges include (1) transmission 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) difficulty in determining which electricity users should pay for new transmission lines, particularly where those lines need to be built in states with significant wind resources, small populations, and low electricity demand.

Part I 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, and 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 site new transmission lines to accommodate growth in renewable energy. In 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 that governs interstate transmission line planning, siting, and operation. Part III discusses 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 into the large and interconnected network of electricity transmission that today connects electricity generators 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 (42%), natural gas (25%), or uranium (19%) to produce most of the 4.1 billion kilowatt-hours ("kWh") of electricity.[4] Hydropower generates 8%, and the remaining renewables generate just 5% of electricity.[5] Electricity is carried long distances across the United States, with over 200,000 miles of high-voltage transmission lines (230 kV or greater),[6] crisscrossing the country and linking into Canada and, to a lesser extent, Mexico.[7] From the high-voltage transmission grid, electricity is then "stepped down" to a lower

3. RICHARD F. HIRSCH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM 12 (1999).

4. *Electricity Explained: Electricity in the United States*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states (last updated May 2, 2012).

5. *Id.*

6. *Electricity Transmission*, EDISON ELECTRIC INST., http://www.eei.org/ourissues/ElectricityTransmission/Pages/default.aspx (last visited Aug. 19, 2012); *see also* REGULATORY ASSISTANCE PROJECT, ELECTRICITY REGULATION IN THE US: A GUIDE 65 (2011) [hereinafter "RAP"], *available at* http://www.raponline.org/document/download/id/645 (discussing the nation's transmission system and defining "transmission" as lines that carry power long distances at voltages of 115 kV (kilovolts, 1,000 volts) and above through big wires, as compared to sub-transmission and distribution lines that carry power through smaller wires to retail customers).

7. Transmission lines have evolved into three major national networks (power grids): the Eastern Interconnection, the Western Interconnection, and the Texas Interconnection. These are further subdivided into power pools, which have become the regional transmission organizations ("RTOs") or independent system operators ("ISOs"). "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." *Electric Power Industry Overview 2007*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/cneaf/electricity/page/prim2/toc2.html (last visited Sept. 25, 2012).

voltage either at a substation for delivery to consumers or at the consumer location itself (residential 37%, commercial 34%, industrial 26%) on low-voltage distribution lines (less than 50 kV).[8]

In terms of sales, electricity is a multitrillion dollar business with investor-owned utilities ("IOUs") selling 65% of generated electricity, public municipal utilities selling 16%, rural electric cooperatives selling 11%, and independent power producers selling 6%.[9] Electricity is often thought of as a "natural monopoly."[10] Until recently, most of the industry remained vertically integrated: most utilities owned large, centralized generation facilities, transmission lines, and distribution lines and covered 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."[11] This "regulator compact" ensured an exclusive service territory to utilities in exchange for reasonable electricity rates for captive customers.

The 1970s oil shocks, new regulatory requirements, and increasingly contentious and expensive investments in nuclear power with large cost overruns brought the traditional utility system under greater public and regulatory scrutiny.[12] 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

8. *Electricity Explained: How Electricity is Delivered to Consumers*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/energyexplained/index.cfm?page=electricity_delivery (last visited Sept. 25, 2012); *Electricity Explained: Use of Electricity*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/energyexplained/index.cfm?page=electricity_use (last visited Sept. 25, 2012).

9. *Electricity Explained: Electricity in the United States, supra* note 4.

10. *See* RAP, *supra* note 6, at 3–6 (explaining how utilities in many parts of the country are "natural monopolies" in that they are not required to compete with other utilities within their service areas and are allowed by law to restrict output in exchange for serving the public interest and allowing government regulators to set rates that will compensate utilities for their costs).

11. *See* HIRSCH, *supra* note 3, at 26–27 (discussing how and why the restructuring of the electric utility industry from monopolistic to freewheeling competition occurred).

12. *Id.* at 66.

infrastructure investments.[13] These plans would require utilities to estimate their projected electricity demand, generation resources, and investments in new projects for four-, ten-, and/or twenty-year planning periods on a least cost, "integrated basis," before new projects are approved and integrated into the base rate for customers. Twenty-eight states currently require integrated resource plans.[14] These plans require utilities to examine "least cost" resource mixes (including conventional generation as well as renewables, energy efficiency, conservation, new transmission, and improvements to existing facilities),[15] while incorporating environmental factors, land use factors, and economic and reliability factors into resource planning.

Most states also delegate 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 fits with the state's resource planning, the need for the line based on demand, a full evaluation of the environmental impacts of the line, and the availability of alternatives.[16] Once a line obtains 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.[17]

In the early 1990s, many states began to restructure their regulated utilities by splitting 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 lower costs, spurred this transformation. While troubles with the restructured market in California and the Northeast prompted a partial re-regulation in some cases, the

13. *See generally* RAP, *supra* note 6, at 111 (explaining integrated resource planning).

14. Frederick Weston, Bd. Dir., Regulatory Assistance Project, Integrated Resource Planning: History and Principles 15, Presentation at the 27th National Regulatory Conference (May 20, 2009), *available at* http://www.raponline.org/document/download/id/419.

15. PORTLAND GEN. ELEC., ISSUES IN PERSPECTIVE: INTEGRATED RESOURCE PLAN 1 (2010), *available at* http://www.portlandgeneral.com/our_company/news_issues/current_issues/energy_strategy/docs/irp_issues_in_perspective.pdf.

16. *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) (reviewing state regulations on transmission siting).

17. *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).

fundamental nature of the industry had been significantly altered. Today, about half the states are still traditionally regulated (with vertically integrated utilities) and the rest are restructured or partially restructured.[18] Regional transmission organizations ("RTOs") and independent system operators ("ISOs"), 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.[19]

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 subregions—the Eastern Interconnection, the Western Interconnection, and the grid serving Texas—yet most of the planning, siting, and approvals of transmission lines are managed by state-level public utility commissions.[20] Within each subregion, the electric network is highly interconnected and interdependent, but there is virtually no capability to move electricity between these three subregions.[21] The North American Electric Reliability Corporation ("NERC"), a nongovernmental organization, works with eight regional entities which subdivide the grid even further to ensure bulk power reliability.[22]

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18. *See* U.S. DEPT. OF ENERGY, A PRIMER ON ELECTRIC UTILITIES, DEREGULATION, AND RESTRUCTURING OF U.S. ELECTRICITY MARKETS 9 (2002*), available at* https://www1.eere.energy.gov/femp/pdfs/primer.pdf (providing introduction to utility restructuring); *Status of Electricity Restructuring by State*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/cneaf/electricity/page/restructuring/restructure_elect.html (last updated Sept. 2010) (showing information on electric-industry restructuring).

19. *See Industries – RTO/ISO*, FED. ENERGY REG. COMMISSION, http://www.ferc.gov/industries/electric/indus-act/rto.asp (last updated Sept. 18, 2012) (map showing regional transmission organizations).

20. *See* 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."); *see also Visualizing the U.S. Electric Grid*, NAT'L PUB. RADIO (Apr. 24, 2009), http://www.npr.org/templates/story/story.php?storyId=110997398 (interactive map displaying transmission lines and energy infrastructure).

21. Blumsack, *supra* note 20, at 155.

22. *Key Players: Regional Entities*, N. AM. ELECTRIC RELIABILITY CORP., http://www.nerc.com/page.php?cid=1|9|119 (last visited Aug. 22, 2012); *NERC: About NERC*, N. AM. ELECTRIC RELIABILITY CORP., http://www.nerc.com/page.php?cid=1 (last visited Aug. 22, 2012).

B. Renewable Energy Policy

In the absence of comprehensive federal policies to reduce greenhouse gas emissions 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.[23] Historically, just a small fraction of electricity produced in the United States was generated from renewable energy sources. From 1989 to 2004, non-hydropower renewable energy generated just 2% to 2.5% of all electricity produced.[24] Most of this electricity was generated from biomass combustion, municipal solid waste, and geothermal energy, with solar and wind comprising a small fraction.[25] After 2005, growth in renewable energy—primarily wind power—increased significantly, with non-hydropower renewable energy in 2011 accounting for 5% of all electricity nationwide and over 10% in several states.[26]

Thirty-eight states currently have adopted renewable portfolio standards ("RPSs"), alternative energy portfolios, or voluntary goals to spur additional renewable energy development.[27] There is significant state-by-state variation within the adopted RPSs; which policy instruments states choose to use and who is held accountable for meeting the binding or nonbinding targets varies greatly.[28] Many states have additional policies to promote renewable energy such as renewable energy credits ("RECs"),[29] feed-in tariffs, tax incentives, and taxes.[30]

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23. *See* Barry Rabe, *States on Steroids: The Intergovernmental Odyssey of American Climate Policy*, 25 REV. POL'Y RES. 105 (2008) (discussing factors that have contributed to state primacy in renewable energy policy).

24. MIRIAM FISCHLEIN, RENEWABLE ENERGY DEPLOYMENT IN THE ELECTRICITY SECTOR: THREE ESSAYS ON POLICY DESIGN, SCOPE, AND OUTCOMES 5 (2010), *available at* http://conservancy.umn.edu/bitstream/99640/1/Fischlein_umn_0130E_11598.pdf.

25. *Id.* at 8.

26. *Frequently Asked Questions: What is U.S. Electricity Generation by Energy Source?*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3 (last updated June 26, 2012); *Shares of Electricity Generation from Renewable Sources Up in Many States*, U.S. ENERGY INFO. ADMIN. (Apr. 9, 2012), http://www.eia.gov/todayinenergy/detail.cfm?id=5750.

27. *Renewable and Alternative Energy Portfolio Standards*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, http://www.c2es.org/sites/default/modules/usmap/pdf.php?file=5907 (last updated Aug. 2, 2012).

28. FISCHLEIN, *supra* note 24, at 2–3.

29. *Id.* at 29.

30. *See* Eric Lipton & Clifford Krauss, *A Gold Rush of Subsidies in the Search for Clean Energy*, N.Y. TIMES (Nov. 11, 2011), http://www.nytimes.com/2011/11/12/business/energy-environment/a-cornucopia-of-help-for-renewable-energy.html (highlighting the funding of new wind and solar power through tax breaks and government grants and loans).

State RPSs usually require a specified percentage of electricity sales, measured in megawatt-hours ("MWh"), or generation capacity, measured in MW, to be from renewable sources. Typically RPSs require that by 2020 or 2030, 15% to 25% of electricity sold in the state is to be produced by a renewable energy source.[31] However, the renewable technologies allowed and electric utilities required to participate in the programs can vary widely. Some states—just twelve—include only IOUs under their RPSs, while others also include rural electric cooperatives or municipal utilities; other states, such as Oregon and Michigan, make exclusions based on size or sales capacity.[32] Scholars have documented that, on average, RPSs cover 86% of electricity sales, but some states cover much less. For example, Illinois covers only one-third of electricity sales.[33] Which resources are eligible to be counted under an RPS vary too. Some states allow existing renewable resources to be included; others only count new generation capacity. Some states allow large hydropower facilities to be included, while others do not.[34] Some technologies, like geothermal power, tidal energy, or even wind power, simply do not exist in certain parts of the country.[35]

Some states allow utilities to purchase RECs from other states to meet their RPSs, while others require in-state renewable generation.[36] 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 RPSs, twenty-one allow use of RECs, with use capped in an additional four 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

31. FISCHLEIN, *supra* note 24, at 7.

32. *Id.* at 21.

33. *Id.* at 21–22.

34. *Id.* at 22.

35. *Id.*

36. *Id.* at 29. Tradable 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. *Id.* Because Iowa has a capacity goal, and Illinois and New York require central procurement of renewable energy, these states do not use tradable RECs. *Id.*

regional transmission projects.[37] This illustrates why states are not 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, wind energy is variable in that wind turbines only produce power when the wind blows.[38] While small amounts 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 can be addressed by (1) providing backup reserves, like natural gas plants, which can quickly ramp up if the wind stops blowing; (2) developing energy-storage systems such as pumped hydro; (3) developing wind power in more widespread geographic areas within a connected grid; or (4) improving the predictive power of wind models. In the Midwest Independent System Operator ("MISO") service territory, there are ongoing operational experiments aimed at making wind a "dispatchable intermittent resource"[39] by bidding wind power forecasts into the day-ahead electricity market and then truing up the estimated amount of wind power ten 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. While the "first generation" of wind was often sited where transmission capacity was available, "second-generation" wind development will require new transmission lines that connect areas of commercially viable wind resource to the grid. Just as importantly, unlike coal, natural gas, oil, and other traditional sources of electric power that can be transported

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37. *See infra* Part II.B.2 (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).

38. *See* Matthew L. Wald, *New Rules and Old Plants May Strain Summer Energy Supplies*, N.Y. TIMES (Aug. 11, 2011), http://www.nytimes.com/2011/08/12/business/energy-environment/new-rules-and-old-plants-may-strain-summer-energy-supplies.html (discussing intermittency problems with wind power).

39. MIDWEST ISO, MKT. SUBCOMM., DISPATCHABLE INTERMITTENT RESOURCE IMPLEMENTATION GUIDE (2011), *available at* https://www.midwestiso.org/Library/Repository/Meeting%20Material/Stakeholder/MSC/2011/20110301/20110301%20MSC%20Item%2012a%20DIR%20Implementation%20Update.pdf.

to demand centers by rail, truck, or pipeline, wind resources can currently be transported to demand centers *only* through transmission lines. This makes the expansion of the transmission grid absolutely critical to a significant increase in the utilization of wind resources in this country.

Building these transmission lines will be costly. For example, the transmission system upgrades necessary to integrate planned renewable energy projects in the Western Interconnection are estimated to cost at least $200 billion.[40] Different visions of how the grid will evolve range from a "supergrid" constructed with ultra-high-voltage wires spanning North America to regional upgrades of the grid for specific projects to better connect renewable resources to areas with an unserved demand for electricity.[41] 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 TWENTY-FIRST 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 nonfederal lands, and discusses recent FERC initiatives to promote transmission line projects to facilitate renewable energy development. It shows that Congress has given FERC only limited authority over the siting of transmission lines that are not on federal lands and, for the most part, stakeholders and the courts have thwarted recent efforts by FERC to exercise its siting 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 in parts of the western and southwestern United States,[42] this Part focuses on some of the states west of the Mississippi that have been active in

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

41. *See* STAN MARK KAPLAN, CONG. RESEARCH SERV., R40511, ELECTRIC POWER TRANSMISSION: BACKGROUND AND POLICY ISSUES 10 (2009), *available at* http://fpc.state.gov/documents/organization/122949.pdf (providing background information on electric power transmission and related policy issues before the 111th Congress).

42. *Utility-Scale Land-Based 80-Meter Wind Maps*, WIND POWERING AM., http://www.windpoweringamerica.gov/wind_maps.asp (last visited Sept. 12, 2012).

developing wind energy capacity and consumption. Specifically, we focus on wind energy and transmission line siting 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–related transmission projects found in the selected states and regions. Throughout the state-level discussion, we consider principles of federalism and the difficulty states have experienced in acting as their own "laboratories of democracy" in 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 Nation's transmission grid," with specific directions to build a smart grid.[43] Congress has also "provided significant funding to support broader multiregional planning efforts extending beyond individual utilities or system operators."[44] 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 electric reliability, integrate new renewable energy into the grid, and save consumers money."[45] The RRTT announced in October of 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.[46] The

43. 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).

44. John R. Norris & Jeffery S. Dennis, *Electric Transmission Infrastructure: A Key Piece of the Energy Puzzle,* NAT. RESOURCES & ENV'T, Spring 2011, at 3, 28.

45. *Interagency Rapid Response Team for Transmission*, WHITE HOUSE COUNCIL ON ENVTL. QUALITY, http://www.whitehouse.gov/administration/eop/ceq/initiatives/interagency-rapid-response-team-for-transmission (last visited Sept. 25, 2012).

46. *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

transmission lines were selected from lists produced through ARRA-funded stakeholder processes.[47]

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 line siting. As a result, "the nation's transmission grid is an interconnected patchwork of state-authorized facilities."[48] For the most part, each state manages its own siting procedures for transmission lines, with some regional cooperation and limited federal oversight, and then interacts 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 Transmission Line Siting

The Federal Power Act of 1935 ("FPA") provides the "statutory foundation for regulating the business of transmitting and selling electricity across state lines."[49] Congress has since transferred these responsibilities to FERC.[50] The FPA grants FERC jurisdiction over interstate transmission of electricity and the wholesale sale of electricity in interstate commerce.[51] FERC has no authority to

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between Idaho and Wyoming; (4) Transwest Express, a 700-mile, 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 lines 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. Lynn Garner, *Federal Agencies Select Seven Projects for Fast-Track Transmission Siting Process*, 194 DAILY ENV'T REP. (BNA) A-10 (Oct. 14, 2011).

47. *See Interagency Rapid Response Team for Transmission*, *supra* note 45 (detailing background, goals, and next steps for RRTT).

48. *See* Piedmont Envtl. Council v. FERC, 558 F.3d 304, 310 (4th Cir. 2009) (holding that FERC does not have jurisdiction when a state commission withholds approval of a permit application for over one year).

49. *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 345, 348 (Michael B. Gerrard ed., 2011) (describing the FPA).

50. Fucci, *supra* note 49, at 348.

51. Dworkin et al., *supra* note 16, at 535; *see also* New York v. FERC, 535 U.S. at 5–8 (discussing development of a federal transmission system, the FPA's grant of authority to what

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 within the purview of the states.[52] 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.' "[53] If a rate is not reasonable, FERC may order a new rate. This statutory framework, although modified in the 1970s, still forms the basis for much of the electricity framework and physical and financial investments that remain in place today.[54]

After enactment of the FPA, PURPA was the next major 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."[55] This was meant to "reduce dependence on foreign oil, to promote alternative energy sources and energy efficiency, and to diversify the electric power industry."[56] PURPA 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."[57] 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."[58]

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is now FERC over transmission of electricity in interstate commerce, and sale of electricity at wholesale in interstate commerce).

52. *See* Rossi, *supra* note 17, at 1017, 1033 (discussing the historical obstacles to federal authority for transmission line siting).

53. Fucci, *supra* note 49, at 348.

54. Dworkin et al., *supra* note 16, at 535.

55. Jim Rossi, *The Limits of a National Renewable Portfolio Standard*, 42 CONN. L. REV. 1425, 1427 (2010).

56. Dworkin et al., *supra* note 16, at 535.

57. Fucci, *supra* note 49, at 349.

58. Dworkin et al., *supra* note 16, at 536.

Prior to 1992, any utility that wanted to move electricity across another system had to first obtain approval.[59] In 1992, Congress sought to promote even greater competition at the generator level. Because competition in generation is only possible if nonutility generators have access to the same transmission lines that utilities own, 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").[60] FERC did so by promulgating Order 888 in 1996, which requires all transmission utilities that also generate electricity to "file open access non-discriminatory transmission tariffs ("OATTs") that contain minimum terms and conditions of non-discriminatory service."[61] Nondiscriminatory service includes a requirement that all electricity generators connect to the grid for the same price.[62] The EPAct 1992 also incentivized renewable energy generation by introducing the Production Tax Credit ("PTC").[63] The PTC, by providing a credit of $0.02 for each kWh produced, has helped increase installed wind capacity from only 2,000 MW in 1993 to over 25,000 MW today.[64] Unfortunately, the PTC, which is not permanent and has repeatedly been allowed to expire, has created a "boom-and-bust" cycle of investment. Projects are rapidly completed before the PTC expiration, unnecessarily driving up prices, followed by a collapse in investment in wind energy infrastructure of 73% to 93% in the years after the expiration.[65]

The next major piece of legislation in this area was the EPAct 2005, which Congress enacted "to promote energy efficiency and a diversity of fuel sources, as well as strengthen the interstate delivery

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59. *Id.* at 535.

60. *Id.* at 542.

61. *Id.* (internal quotation marks omitted).

62. *Id.*

63. 26 U.S.C. § 45 (2006). The Production Tax Credit currently pays 2.2¢ per kilowatt-hour for generated wind energy and is set to expire in December 2012. *Renewable Electricity Production Tax Credit*, DSIRE: DATABASE OF ST. INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://dsireusa.org/incentives/incentive.cfm?Incentive_Code=US13F (last updated May 22, 2012).

64. 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).

65. Christopher Riti, Comment, *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 64, at 61 (analyzing the PTC's effectiveness by comparing the amount of new capacity during years it was continuously in effect with years in which it expired).

system for energy supplies."[66] The legislation was a direct reaction to the 2003 blackouts in the Northeast and the Midwest,[67] 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."[68] The EPAct 2005 amended the FPA, and as part of those amendments added section 216, which created a number of policies that affected transmission line siting. These include the establishment of national interest electric transmission corridors ("NIETCs"), federal "backstop" siting authority, and a framework for interstate compacts. 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: The EPAct 2005 directs the U.S. Department of Energy ("DOE") to conduct a transmission congestion study every three years to identify any areas of the country that are experiencing transmission constraints or congestion.[69] If such areas exist, the DOE may classify them as NIETCs.[70] NIETC designation allows FERC to exercise "backstop" siting authority under section 216 of the FPA and override state barriers to transmission siting.[71] In designating NIETCs, the DOE must consult with affected states.[72] Although the 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.),[73] 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.[74] As a result, the NIETC corridor designations were remanded to the DOE to begin the

66. Swanstrom & Jolivert, *supra* note 43, at 422.

67. *Id.* at 423.

68. *Id.* (internal quotation marks omitted).

69. *See* Energy Policy Act of 2005 § 1221, 16 U.S.C. § 824p (2006) (mandating such studies of congested areas).

70. 16 U.S.C. § 824p(a) (2006).

71. *Ninth Circuit Vacates the Department of Energy Congestion Study and Designation of National Interest Electric Transmission Corridors*, CORP. COUNS. MONITOR, Apr. 2011, at 19.

72. *Id.*

73. *See National Electric Transmission Corridor Report and the Ordered National Corridor Designation*, U.S. DEP'T OF ENERGY, http://nietc.anl.gov/nationalcorridor/index.cfm (last visited Sept. 3, 2012) (listing the states comprising the Mid-Atlantic and Southwest Area National Corridors).

74. Cal. Wilderness Coal. v. U.S. Dep't of Energy, 631 F.3d 1072, 1107 (9th Cir. 2011).

process over again.[75] Notably, although many states opposed the NIETCs, some states favored them in order to allow easier export of renewable resources to population centers. For instance, in her comments to the DOE in 2008, Susan Wefald, then a North Dakota Public Service Commissioner, expressed concerns over the impediments to interstate transmission line siting, and hoped that the Dakotas would be designated as a NIETC, which would allow for more efficient transmission line siting in connection with developing the state's wind resources.[76]

In September 2011, the Obama Administration formulated a plan that would delegate the DOE's authority to designate NIETCs to FERC.[77] This delegation was specifically designed to overcome the Ninth Circuit's ruling discussed above and the Fourth Circuit's ruling discussed below.[78] 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.[79] Some members of Congress immediately opposed this plan, however, on grounds it would rewrite the EPAct 2005 by allowing FERC to approve specific projects by designating congestion corridors.[80] 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.[81]

Backstop Siting Authority: As noted above, the EPAct 2005 granted FERC siting and eminent domain authority over interstate

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75. *Id.*

76. *See* Susan Wefald, N.D. Pub. Serv. Comm'r, Comments at U.S. Department of Energy Transmission Congestion Study Workshop 3 (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.").

77. *See* 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 (reporting on plan to create fast-track approval process for major transmission lines serving renewable energy projects).

78. *Id.*

79. *Id.*

80. Hannah Northey, *Transmission: Bingaman Moves to Block DOE, FERC Grid Proposal*, ENV'T & ENERGY DAILY, Sept. 13, 2011, *available at* http://www.eenews.net/EEDaily/2011/09/13/6.

81. *See* Lynn Garner, *Energy Department Drops Plan to Cede Power to FERC for Siting Transmission Lines*, 42 ENV'T REP. (BNA) 2297 (Oct. 14, 2011) (reporting the DOE's abandonment of the plan).

transmission lines under certain conditions when a transmission developer is not able to site a line at the state level. Specifically, in order to exercise such backstop authority, FERC must establish that (1) the state does not have the authority to approve the siting of the line or to consider the benefits of the interstate line in its approval process,[82] (2) the state is unable to site the line because the transmission applicant does not (and will not) sell retail electricity in the state,[83] (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."[84] 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.[85] The court found that if a state denies a siting permit, FERC cannot overrule that decision under section 216 because the law only provides backstop authority where a state refuses to act within one year, or where the state grants a permit but attaches "project-killing conditions" which constitute a misuse of state authority, not when a state merely denies a siting permit.[86] As a result of this decision, FERC's backstop siting authority remains limited at best.

Interstate Compacts:[87] Section 1221 of the EPAct 2005 authorizes three or more contiguous states to enter into an interstate compact that establishes regional siting agencies to carry out those states' siting responsibilities.[88] To promote interstate compacts and regional coordination, the EPAct 2005 prohibits FERC from using its

82. 16 U.S.C. § 824p(b)(1)(A) (2006).

83. § 824p(b)(1)(B).

84. § 824p(b)(1)(C).

85. Piedmont Envtl. Council v. FERC, 558 F.3d 304, 313 (4th Cir. 2009), *cert. denied*, 130 S. Ct. 1138 (2010).

86. *Id.* at 314–15.

87. *See* § 824p(b) (discussing construction permits for transmission facilities); Mike Dotten & Steve Jones, *Battle over Transmission Siting: Congress Considers Federalizing Permit Process, While Fourth Circuit Upholds States' Right to Control It*, MARTEN LAW (Mar. 10, 2009), http://www.martenlaw.com/newsletter/20090310-transmission-siting-battle (discussing the balance between federal and state authority for transmission siting).

88. DIANE B. DAVIES ET AL., ELECTRIC TRANSMISSION SITING PROCESSES IN SELECTED WESTERN AND MIDWESTERN STATES 40 (2010), *available at* http://www.three-county.org/6004492_1.pdf.

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.[89] At this time, no "interstate compacts for transmission siting . . . have been officially formed."[90]

In the wake of FERC's unsuccessful efforts to implement the EPAct 2005, some members of Congress have attempted to create a larger federal role in this area, but so far without success.[91] Most notably, in 2009, the House of Representatives adopted the American Clean Energy and Security Act of 2009 (also known as the Waxman-Markey Bill).[92] 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.[93] The Waxman-Markey Bill was most well-known for creating a federal cap-and-trade system to limit greenhouse gas emissions, but it also included a major provision relating to renewable energy and electricity transmission.[94] It endorsed a regional transmission-planning process that expanded federal backstop authority over transmission, and established FERC review of plans for consistency with transmission principles, including the deployment of renewable and low-carbon energy sources.[95] 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,

89. *Id.*

90. *Id.*

91. *See, e.g.*, Securing America's Future with Energy and Sustainable Technologies Act, S. 559, 112th Cong. § 601 (2011) (attempting to establish a national renewable electricity standard of 25% by 2025); Renewable Electricity Promotion Act of 2010, S. 3813, 111th Cong. § 610(b)(1)(B) (2010) (attempting to establish a national renewable portfolio standard of 15% by 2021); Powering America for Tomorrow Act, H.R. 5515, 111th Cong. (2010) (attempting to mandate designation of regional transmission authorities); American Clean Energy Leadership Act, S. 1462, 111th Cong. §§ 121, 132 (2009) (responding directly to the holding in *Piedmont*, this bill would have granted federal backstop siting authority in all fifty states and would have developed a national renewable portfolio standard); American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. §§ 101(a), 151(b) (2009) (also 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); Clean Renewable Energy and Economic Development Act, S. 539, 111th Cong. § 3 (2009) (attempting to allow the DOE to designate national renewable energy zones and expanding FERC's backstop siting authority to these zones).

92. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009).

93. *See H.R. 2454: American Clean Energy and Security Act of 2009,* GOVTRACK.US, http://www.govtrack.us/congress/bill.xpd?bill=h111-2454 (last visited Sept. 2, 2012) (noting that the bill passed the House of Representatives but not the Senate).

94. H.R. 2454 § 101.

95. *Id.* § 151.

rejected the application, or imposed unreasonable conditions on the project.[96] The bill was a direct response to the Fourth Circuit's holding in *Piedmont*.[97] Moreover, the bill would have established a federal RPS, requiring that 6% of electric power come from renewable resources by 2012, and 20% by 2020. The Waxman-Markey Bill would not have preempted state-level RPSs, but instead would have given regulated utilities federal credits in an amount equal to the state credits that they were already earning.[98]

2. FERC Orders Governing Transmission Line Siting

In general, FERC exercises authority over electricity transmission pursuant to section 201 of the FPA,[99] 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.[100] Pursuant to its authority, FERC has issued various orders relevant to transmission systems, some of which highlight the challenges associated with building enhanced transmission for renewable energy development.

Order 888: In 1996, FERC issued Order 888, which adopted a nationwide policy of "open access" to the transmission system.[101] This required every transmission line owner subject to FERC jurisdiction to transmit wholesale power at rates, terms, and conditions identical to those applied to its own wholesale power supplies.[102] Order 888 requires all public utilities that own, control, or operate facilities used for transmitting electric energy in interstate commerce to file

96. DAVIES ET AL., *supra* note 88, at 42.

97. Peidmont Envtl. Council v. FERC, 558 F.3d 304 (4th Cir. 2009), *cert. denied*, 130 S. Ct. 1138 (2010).

98. 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.

99. 16 U.S.C. § 824 (2006); Dworkin et al., *supra* note 16, at 536.

100. Dworkin et al., *supra* note 16, at 536.

101. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 62 Fed. Reg. 12,274 (Mar. 14, 1997) (codified at 18 C.F.R. pt. 35).

102. Norris & Dennis, *supra* note 44, at 5.

nondiscriminatory open access transmission tariffs ("OATTs"), which contain minimum terms and conditions of service.[103] 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.[104]

Order 2000: In 1999, FERC approved Order 2000, which encourages the creation of RTOs.[105] 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.[106] 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.[107] No RTOs serve the Northwest, the Southeast, the Mountain West, or the Southwest.[108] ERCOT functions as Texas's ISO, but it is not under FERC's jurisdiction because it is "only asynchronously . . . connected to the interstate grid," and therefore does not involve transmission in interstate commerce.[109] RTOs are discussed in more detail in Part II.C.

Order 2003: In 2003, FERC issued Order 2003 which requires transmission line providers to include a large generator interconnection procedure ("LGIP") and a large generator interconnection agreement ("LGIA") in their respective OATTs.[110] The order, which was designed to promote fair, competitive, and reliable operation of the wholesale power market, contains a standard LGIP and LGIA for large generating facilities (greater than 20 MW in

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103. Dworkin et al., *supra* note 16, at 536–37.

104. Swanstrom & Jolivert, *supra* note 43, at 419–20.

105. Regional Transmission Organizations, 65 Fed. Reg. 12,088 (Mar. 8, 2000) (codified at 18 C.F.R. pt. 35).

106. *Id.*

107. Dworkin et al., *supra* note 16, at 540.

108. *Id.*

109. *Id.*

110. Standardization of Generator Interconnection Agreements and Procedures, 104 FERC ¶ 61,103 (July 24, 2003). *See* MIKE MICHAUD, MATRIX ENERGY SOLUTIONS, A WHITE PAPER ON UNTANGLING FERC & STATE JURISDICTION INTERCONNECTION ISSUES AND OPPORTUNITIES FOR DISPERSED GENERATION 5 (2007), available at http://www.c-bed.org/pdf /Jurisdiction_White_Paper_2007-11-16.pdf (discussing Order 2003); Dworkin et al., *supra* note 16, at 542 (discussing Order 2003); NAT'L WIND COORDINATING COMM., RTO UPDATE, Sept. 5, 2003, at 1, *available at* http://www.nationalwind.org/assets/archive/TM_Update_2003-09.pdf (discussing Order 2003).

generating capacity).[111] Later FERC orders include procedures and agreements for small generators as well as for wind projects.[112]

Order 890: The next FERC order that focused extensively on transmission issues was Order 890 in 2007, which requires public utilities to participate in open and transparent transmission-planning processes.[113] The intent of the order was to mitigate conflict at the local and regional level by facilitating an open process and coordination.[114] In general, FERC does not have authority to allow transmission line developers to require utilities to pay for transmission lines from which they derive no benefit. Because determining benefit can be elusive, this makes it difficult to spread the cost of new lines among all utilities servicing the region in which the line will be located. There has also been tension and uncertainty when transmission line 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. Many have viewed this uncertain allocation scheme as "chilling transmission development."[115] This caused FERC to propose Order 1000, which leaves cost allocation up to regional entities, but grants FERC the authority to step in when those regional entities cannot agree.

Order 1000: FERC issued Order 1000 in July 2011.[116] The order directs organizations and states to cooperate and to consider the benefits of interstate transmission lines. It establishes three requirements for transmission planning. Each public utility transmission provider must (1) participate in a regional transmission-

111. Standardization of Generator Interconnection Agreements and Procedures, 104 FERC ¶ 61,103 (July 24, 2003). *See* MICHAUD, *supra* note 110, at 5 (discussing Order 2003); Dworkin et al., *supra* note 16, at 542 (discussing Order 2003); NAT'L WIND COORDINATING COMM., *supra* note 110 (discussing Order 2003).

112. *See* Standardization of Small Generator Interconnection Agreements and Procedures, 70 Fed. Reg. 34,190 apps. E–F (June 13, 2005) (codified at 18 C.F.R. pt. 35) (discussing interconnection procedures and agreements for small generators); Interconnection for Wind Energy, 111 FERC ¶ 61,353 (June 2, 2005) (discussing interconnection procedures and agreements for wind generators); Dworkin et al., *supra* note 16, at 542 (discussing FERC orders on wind generators and small generators).

113. Preventing Undue Discrimination and Preference in Transmission Service, 72 Fed. Reg. 12,266 (Mar. 15, 2007) (codified at 18 C.F.R. pts. 35 & 37).

114. 42 U.S.C. § 4321 (2006); DAVIES ET AL., *supra* note 88, at 42.

115. Steven C. Kohl & Scott M. Watson, *A Brief Introduction to Electricity Transmission*, MICH. B.J., Jan. 2011, at 22, 25.

116. Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 136 FERC ¶ 61,051 (July 21, 2011).

planning process that satisfies the requirements set out in Order 890 and produce a regional transmission plan, (2) establish procedures to identify transmission needs based on public policy requirements in 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.[117] 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 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."[118]

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 Commission v. FERC*,[119] 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 approved FERC's decision to impose regional cost sharing given the difficulty of quantifying the reliability benefits of new transmission.[120]

The question of how to spread out costs for a new transmission line is "guided by the 'cost causation' principle, which has long

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117. Chad Marriott, *FERC Issues Order No. 1000 on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, RENEWABLE + L. (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/.

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

119. 576 F.3d 470, 476 (7th Cir. 2009).

120. *Id.* at 479 (Cudahy, J., concurring in part and dissenting in part). *See also* Rossi, *supra* note 55, at 1447 (discussing Judge Cudahy's dissenting opinion).

influenced how FERC and the courts approach allocating transmission costs (and recovering those costs from electricity consumers). Under this principle, rates must 'reflect to some degree the costs actually caused by the customer who must pay them.' "[121] "This principle can also be thought of as a 'beneficiary pays' approach because, as the Seventh Circuit recently put it, '[t]o the extent that a [customer] benefits from the costs of new facilities, it may be said to have "caused" a part of those costs.' "[122] 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 generally 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 line siting on private lands, the federal government has plenary authority over transmission line siting on federal lands, which constitute a significant percentage of the land in western states. Moreover, in the EPAct 2005, Congress required the U.S. Department of the Interior to approve 10,000 MW of renewable energy–generating projects on public lands by 2015, providing additional incentives for transmission projects on federal lands.[123] There are several laws in place that grant the federal government authority to site transmission lines on federal land. These include the Federal Lands Policy and Management Act[124] and the National Forest Policy Management Act,[125] which allow the Bureau of Land Management ("BLM") and the U.S. Department of Agriculture, respectively, to include transmission lines in their land use plans and issue transmission permits. Notably, the BLM program excludes protected areas, such as Wilderness and Wilderness Study Areas, National Monuments, and Wild and Scenic Rivers, from wind energy development. The BLM program requires that wind energy projects be developed, to the extent possible, in a manner that allows other

121. Norris & Dennis, *supra* note 44, at 6 (quoting K.N. Energy, Inc. v. FERC, 968 F.2d 1295, 1300 (D.C. Cir. 1992)).

122. Norris & Dennis, *supra* note 44, at 6 (quoting *Illinois Commerce Comm'n*, 576 F.3d at 476).

123. Energy Policy Act of 2005, Pub. L. No. 109-58, § 211, 119 Stat. 594, 660.

124. 43 U.S.C. §§ 1761–1771 (2006).

125. 16 U.S.C. §§ 1600–1614 (2006).

land uses, such as mineral development, grazing, and recreational use.[126]

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 SunZia and the Zephyr Project ("ZTP").

SunZia is a line that will transmit primarily renewable energy (wind and solar). The estimated transmission capacity for this proposed line is 3,000 MW for two 500 kV alternating current ("AC")[127] lines (or more if a hybrid line is justified).[128] The length of the proposed route is approximately 500 miles. One preferred route for the SunZia line maximizes use of public lands managed by the BLM, the Arizona State Land Department and the New Mexico State Land Office. Over 80% of this route in Arizona and New Mexico is on public land.[129] Use of private property will be acquired through fee purchase and easements.[130] In the spring of 2011, FERC approved SunZia's application to offer capacity at negotiated rates.[131]

ZTP will be a 3,000 MW, 950-mile line connecting wind energy projects in eastern Wyoming to the Southwest, allowing California to access those renewable resources for purposes of meeting its state renewable energy standard.[132] The line is currently designated to be in service by 2020 at a cost of approximately $3.5 billion. Duke American

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126. Jeremy Firestone & Jeffrey P. Kehne, *Wind*, *in* THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 361, 373 (Michael B. Gerrard ed., 2011).

127. Most electric transmission in the United States today is alternating current ("AC") which allows power to move in both directions. Over very long distances, however, direct current ("DC"), where power moves in only one direction, can be more efficient and result in less power loss over the length of the line. DC acts more like an extension cord with no "off ramps" meaning that power cannot be added to the line or used from the line except at each end through special converters. *See* MICHAEL HEYECK & EVAN R. WILCOX, AM. ELEC. POWER, INTERSTATE ELECTRIC TRANSMISSION: ENABLER FOR CLEAN ENERGY 4–5 (2008), *available at* http://www.aep.com/about/transmission/docs/EnablerforCleanEnergy.pdf (explaining history of development of AC and DC systems and benefits and drawbacks to both); ALEXANDRA VON MEIR, ELECTRIC POWER SYSTEMS: A CONCEPTUAL INTRODUCTION 49 (2006) (defining and discussing prevalence of AC and DC lines); *About HVDC Technology*, CLEAN LINE ENERGY PARTNERS, http://www.cleanlineenergy.com/technology/hvdc (last visited Sept. 3, 2012) (discussing the advantages of DC power lines).

128. SUNZIA, http://www.sunzia.net (last visited Sept. 2, 2012).

129. *SunZia Southwest Transmission Project Information*, SUNZIA, http://www.sunzia.net/project_information.php?show_tab=description (last visited Sept. 2, 2012).

130. *Id.*

131. Sunzia Transmission, LLC, 135 FERC ¶ 61,169 (May 20, 2011).

132. *See Zephyr Project*, WYO. INFRASTRUCTURE AUTHORITY http://wyia.org/projects/transmission-projects/zephyr-project-ztp/ (last visited Sept. 2, 2012) (describing the Zephyr project).

Transmission Company is developing the line and FERC granted negotiated rate authority in 2009. Duke American is currently seeking a permit from the BLM to place the line in a right-of-way ("ROW") corridor. The Pathfinder Renewable Wind Energy's wind-generation project in Wyoming has subscribed 2,100 MW of the line's capacity and an "open season" will determine subscription for the remaining 900 MW of capacity.[133]

These projects on federal lands are closely tied to California's RPS, which mandates that utilities obtain 33% of their electricity from renewable energy sources by 2020.[134] This standard will require the state to import more renewable electricity from other states. Nevertheless, renewable energy generation is often quicker to build than transmission lines, 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, aside from the PTC and the current Administration's policy for federal lands, it is primarily the states rather than the federal government that are setting renewable energy policy throughout the country. 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 line 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.[135] 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.

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133. *See* DUKE AM. TRANSMISSION CO., ZEPHYR POWER TRANSMISSION PROJECT, 1 (2012), *available at* http://www.datcllc.com/wp-content/uploads/2012/02/ZephyrProject-Web.pdf (describing the Zephyr Project).

134. *See infra* notes 185–89 and accompanying text (discussing the California RPS).

135. *See* Dworkin et al., *supra* note 16, at 538 (noting that states usually vest approval authority for transmission lines in public utility commissions); Rossi, *supra* note 17, at 1019–22 (describing state regulators' certificate of need and siting determinations).

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 supreme powers that are limited in scope and the states have residual broad and plenary powers.[136] 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."[137]

Until the New Deal,[138] the idea of dual federalism dominated judicial discourse surrounding the relationship between the states and the federal government.[139] 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.[140] 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."[141] Scholars have given varying labels to this new brand of federalism, including "polyphonic federalism," "dynamic federalism," "empowering federalism," and "cooperative federalism."[142]

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

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136. *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) (describing states' reserved powers).

137. *Gregory*, 501 U.S. at 458.

138. The "New Deal" refers to congressional legislation and executive orders in the 1930s under the direction of President Franklin Delano Roosevelt to respond to the economic challenges of the Great Depression. *See* KATHLEEN M. SULLIVAN & GERALD GUNTHER, CONSTITUTIONAL LAW 91–96 (17th ed. 2010) (describing Supreme Court decisions in response to Roosevelt's New Deal efforts).

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

140. *Id.*

141. *See, e.g.*, United States v. Morrison, 529 U.S. 598, 646–47 (2000) (Souter, J., dissenting) (rejecting a concept of federalism based on "inviolable . . . spheres" that separate state and federal functions); Schapiro, *supra* note 139, at 40–41 (stating that "overlapping state and federal regulation has become the norm for many, if not most" areas of regulation).

142. *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).

that Congress does not have the power to preempt or displace state law in this area.[143] 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.[144] Although Congress has regulated air pollution, water pollution, waste, coastal areas, and endangered species in ways that necessarily impinge on state and local land use authority, these interferences are the exception rather than the rule.[145] 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.[146]

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

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143. 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. 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). *See* Hillsborough Cnty. v. Automated Med. Labs., Inc., 471 U.S. 707, 713 (1985) (citing Jones v. Rath Packing Co., 430 U.S. 519, 525 (1977), Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947), Hines v. Davidowitz, 312 U.S. 52, 67 (1941)) (listing the three types of preemption); Caleb Nelson, *Preemption*, 86 VA. L. REV. 225, 226–28 (2000) (describing three types of preemption).

144. *See* U.S. CONST. art. I, § 8, cl. 3 (enumerating Congress's power to regulate commerce); Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231, 261 (2008) (arguing that the federal government can regulate land use through its Commerce Clause powers); Jerold S. Kayden, *National Land-Use Planning in America: Something Whose Time Has Never Come*, 3 WASH. U. J.L. & POL'Y 445, 451–52 (2000) (same).

145. *See, e.g.*, 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) (describing overlapping federal and state land use regulations); Uma Outka, *The Renewable Energy Footprint*, 30 STAN. ENVTL. L.J. 241, 255–56 (2011) (noting that federal authority over hydroelectric facilities is an exception to states' primary authority over land use); Patricia E. Salkin, *Smart Growth and Sustainable Development: Threads of a National Land Use Policy*, 36 VAL. U. L. REV. 381, 384 (2000) (describing the federal Coastal Zone Management Act).

146. *See, e.g.*, Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1049, 1092 (2009) (advocating a federal-local cooperative framework for wind siting policies analogous to the Telecommunication Siting Policy in the federal Telecommunications Act of 1996).

politically difficult it has been for Congress to transfer any 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 even though the benefits of the projects are primarily regional.[147] But Professor 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. These include 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.[148] In recent decades, the United States has moved to a more dynamic or cooperative federalism approach in many areas that were formerly within the exclusive realm of the states, such as health, safety, and environmental protection.[149] By contrast, transmission line siting continues to sit squarely in the realm of "land use" and thus remains subject to almost exclusive state control. In many western states, the high percentage of land owned and managed by federal governmental agencies adds an additional layer of complexity.

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 because "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."[150] 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), immigration (Arizona), and other policy areas, many of which were

147. *See, e.g.*, Ashley C. 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, 724–26 (2010) (describing how local consequences often outweigh the regional benefits of new transmission lines in the siting process); Richard J. Pierce, Jr., *Environmental Regulation, Energy, and Market Entry*, 15 DUKE ENVTL. L. & POL'Y F., 167, 178–80 (2005) (considering problems of state focus on instate benefits of interstate lines where real benefits are regional in nature).

148. Bronin, *supra* note 144, at 264–66.

149. *See supra* notes 141–42 and accompanying text.

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

ultimately adopted by the federal government.[151] 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 interstate 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 interstate 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 line siting and development.[152] 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 sections 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. The discussion of the challenges these states face and how they attempt to address them sets the stage for Part III, which considers potential solutions. These include greater levels of federal preemption of state law, the possibility of increased authority for regional entities, and the potential value of allocating the costs of new lines on a wider regional basis.

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151. *See, e.g.*, Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097, 1109 (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 being 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).

152. *New State Ice*, 285 U.S. at 311 (Brandeis, J., dissenting).

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 experienced rapid development of renewable energy projects. Utilities in those states have worked together to obtain multistate approval for siting transmission lines to facilitate these projects.

As of June 2012, Minnesota had installed 2,718 MW of wind power,[153] resulting in the state generating an estimated 14.9% of its electricity from wind for 2011, and placing it in the top five states for both MW of wind installed and percent of total electricity generated from wind.[154] With no coal, natural gas, or oil reserves, Minnesota is an electricity importer, and developing indigenous wind resources has enjoyed broad political support.[155] In 2007, Minnesota enacted its renewable energy standard ("RES"),[156] which requires utilities to generate at least 25% of their electricity provided to customers from renewable energy by 2025.[157] 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 North Dakota and South Dakota, fulfilling the RES will include siting additional transmission lines to bring wind energy from those states to Minnesota.[158]

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153. RYAN WISER & MARK BOLINGER, LAWRENCE BERKELEY NAT'L LAB., 2011 WIND TECHNOLOGIES MARKET REPORT 9 tbl.2 (2012), *available at* http://eetd.lbl.gov/ea/emp/reports/lbnl-5559e.pdf; AM. WIND ENERGY ASS'N, AWEA U.S. WIND INDUSTRY SECOND QUARTER 2012 MARKET REPORT 7 (2012), *available at* http://www.awea.org/learnabout/publications/reports/upload/2Q2012_Market_Report_PublicVersion.pdf.

154. WISER & BOLINGER, *supra* note 153, at 9 tbl.2; AM. WIND ENERGY ASS'N, *supra* note 153, at 7.

155. Elizabeth J. Wilson & Jennie C. Stephens, *Wind Deployment in the United States: States, Resources, Policy, and Discourse*, 43 ENVT'L SCI. & TECH. 9063, 9065, 9069 (2009).

156. MINN. STAT. § 216B.1691, subdiv. 2a. (2011).

157. *Id.* § 216B.1691, subdiv. 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%. *Id.* § 216B.1691, subdiv. 2a(b).

158. *See* Daniel Cusick, *Project that Could Boost Midwest 'Wind Belt' Faces Enviro Opposition*, E&E PUBL'G (Dec. 1, 2008), http://www.eenews.net/public/Greenwire/2008/12/01/4 (describing the tri-state transmission line as an "integral part of the utilities' plan" to achieve the RES). *But see* JOHN BAILEY ET AL., MEETING MINNESOTA'S RENEWABLE ENERGY STANDARD USING THE EXISTING TRANSMISSION SYSTEM 1, 3 (2008), *available at* http://www.c-bed.org/pdf/

North Dakota, the "Saudi Arabia of Wind,"[159] had 1,445 MW of wind energy online in June 2012, with an estimated penetration of 14.1% of the electricity generated in the state.[160] As of 2010, North Dakota was ranked second in the nation in terms of percentage of electricity derived from wind and tenth for installed wind capacity.[161] 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 RPS of 10% renewables by 2015[162] 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.[163] Also, commercial wind energy operations of 100 MW or greater built before 2015 will be taxed at 3% (rather than 10%) of assessed value.[164]

Wind development in Iowa has also been rapid and steady. As of June 2012, Iowa had 4,419 MW of wind energy online, placing it second in the nation in installed wind capacity behind Texas.[165] Iowa also ranks second in the nation for percentage of state power derived from wind, at 18.8%.[166] Iowa was the first state to enact a renewable energy purchase requirement in 1983, and in a survey conducted in 2011, 85% of state residents had "a favorable impression of wind energy and wind power companies."[167] Although Iowa does not have an RPS, wind generators sell wind power locally and sell RECs to

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meetingminnesotares.pdf (arguing that Minnesota's RPSs can be met without large transmission upgrades).

159. Joey Peters, *"Saudi Arabia of Wind" Has Trouble Figuring Out How to Get the Power Out*, N.Y. TIMES (Apr. 6, 2011), http://www.nytimes.com/cwire/2011/04/06/06climatewire-saudi-arabia-of-wind-has-trouble-figuring-ou-17108.html.

160. WISER & BOLINGER, *supra* note 153, at 9 tbl.2; AM. WIND ENERGY ASS'N, *supra* note 153, at 7.

161. AM. WIND ENERGY ASS'N, *supra* note 153, at 7; AM. WIND ENERGY ASS'N, WIND ENERGY FACTS: NORTH DAKOTA 1 (2012), *available at* http://awea.org/learnabout/publications/upload/4Q-11-North-Dakota.pdf.

162. N.D. CENT. CODE § 49-02-28 (2011).

163. *Id.* § 57-38-01.8.

164. *Id.* § 57-06-14.1.

165. AM. WIND ENERGY ASS'N, *supra* note 153, at 7.

166. AM. WIND ENERGY ASS'N, WIND ENERGY FACTS: IOWA 1 (2012), *available at* http://www.awea.org/learnabout/publications/factsheets/upload/4Q-11-Iowa.pdf.

167. Press Release, Am. Wind Energy Ass'n, New Poll: In Iowa, the State that Knows Wind Energy the Best, Voters Overwhelmingly Support It and the Companies that Make It (July 1, 2011), *available at* http://www.awea.org/newsroom/pressreleases/Iowa-Poll.cfm.

utilities in other states,[168] and Iowa offers a very generous wind-production tax credit.[169]

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 and North Dakota), or encouraging development of wind for export (Iowa and 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, in which eleven Minnesota utilities jointly proposed to upgrade the state electrical grid.[170] Through a "vision plan" where the utilities sought to determine necessary transmission upgrades to meet the demand growth of utilities serving Minnesota customers, 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.[171] CapX2020 primarily consists of three 345 kV lines spanning nearly 600 miles from Monticello, MN, to Fargo, ND; from Hampton, MN, to Brookings County, SD; and from Hampton, MN, to La Crosse, WI.[172]

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.[173] After obtaining the certificate of need and route permits in Minnesota, the CapX2020 project will have obtained the necessary approvals to begin construction. MISO, the RTO for the Midwest, must approve transmission pricing, however, and the CapX2020 line from Hampton to Brookings County has been approved

168. Brent Stahl et al., *Wind Energy Laws and Incentives: A Survey of Selected State Rules*, 49 WASHBURN L.J. 99, 108 (2009).

169. IOWA CODE § 476B.2 (2011); Stahl et al., *supra* note 168, at 107.

170. *CapX2020 Frequently Asked Questions*, CAPX2020, http://www.capx2020.com/faq.html (last visited Sept. 1, 2012).

171. CAPX2020, APPLICATION TO THE MINNESOTA PUBLIC UTILITIES COMMISSION FOR CERTIFICATES OF NEED, § 1.4 (2007), *available at* http://www.capx2020.com/Regulatory/State/Minnesota/CON_CapX2020_3_projects.html.

172. *Id.*

173. *See Wind Power Scores a Victory in Power Line Decisions*, HOMETOWNSOURCE.COM (Apr. 17, 2009), http://hometownsource.com/2009/04/17/wind-power-scores-a-victory-in-power-line-decisions/ (describing the support of clean energy advocates for the CapX2020 project).

as a Multi Value Project ("MVP"), which will allow costs to be spread and shared across the MISO region's utilities.[174]

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 $2 billion proposed project, known as the "Rock Island Line" for its rough approximation to the former Rock Island Railroad, was designed to encourage additional wind projects in northwestern Iowa, northeastern Nebraska, and southeastern South Dakota.[175] Notably, in this proposal, Clean Line Energy Partners is targeting Illinois and the eastern-running PJM (Pennsylvania, New Jersey, and Maryland) transmission network rather than MISO.[176] Because of the high cost of DC/AC-converter 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 has partnered with Columbus, Ohio–based American Electric Power in an effort to construct a transmission line from Iowa to at least Ohio, beginning with the eastern connection from Ohio, stretching west into Illinois.[177] 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,

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174. Michael Bates, *MISO Stamps MVP Status on CapX2020 Brookings Line*, N. AM. WINDPOWER (June 23, 2011), http://nawindpower.com/e107_plugins/content/content.php?content.8130.

175. Dave Dreeszen, *Wind Transmission Plans Blow into Iowa*, SIOUX CITY J. (Dec. 19, 2010), http://www.siouxcityjournal.com/business/local/article_90b6806c-f6b4-5ad3-9fb0-e583567ae519.html.

176. *See* Dan Piller, *Proposal Calls for Big Power Transmission Line Across Iowa,* DES MOINES REG., June 15, 2011, at B8, *available at* http://www.wind-watch.org/news/2011/06/15/proposal-calls-for-big-power-transmission-line-across-iowa/ (describing the specifications of the Clean Line Energy Partners' proposed transmission line).

177. Dan Piller, *Federal Ruling Boosts Wind Energy Interests*, DES MOINES REG., Aug. 4, 2011, at B8, *available at* http://www.wind-watch.org/news/2011/08/04/federal-ruling-boosts-wind-energy-interests/.

Minnesota or Iowa."[178] 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."[179] 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 the power 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, and 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.

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 affects much of the transmission

178. *Id.*; *see also* MIDWEST ISO, MVPS CREATE JOBS, BENEFITS FOR STATES 1, 2, *available at* https://www.midwestiso.org/Library/Repository/Communication%20Material/Power%20Up/MVP%20Benefits%20-%20Total%20Footprint.pdf (showing that two of the newly-appointed Multi-Value Projects (MVPs) in the MISO region, discussed in Part II.C, *infra*, are in Iowa).

179. Piller, *supra* note 177.

planning in the West.[180] As of August 2012, California had 4,425 MW of wind energy capacity online, ranking it third in the nation for total installed MW of wind energy.[181] However, due to its large electricity demand, in 2011 only 4.0% of California's electricity demand was generated by wind power, ranking it sixteenth among the states in percentage of state energy derived from wind.[182] Amended in 2011, California has one of the most aggressive RPSs in the nation.[183] With a deadline of January 1, 2012, to set utility-specific targets, the standard requires 33% of electricity sold in California to be generated by renewable energy resources by 2020.[184] 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.[185] Additionally, California has created a structure of three "buckets" to meet the statutory obligations of the RPS: (1) RPS-qualifying products generated within the state or a California balancing authority, (2) products that are used to ensure power quality and provide incremental power, and (3) unbundled RECs (where the electric power is used separately from the environmental benefit, for example when wind energy is generated and used in Oregon, but a California utility purchases the REC).[186] To comply with the RPS, Bucket 1 must account for 50% of compliance products (increasing to 75% by 2017), and the cumulative percentage of Buckets 2 and 3 must be limited to 25%.[187] These restrictions could affect the demand for renewable energy and the need for transmission lines in

180. Timothy P. Duane, *Greening the Grid: Implementing Climate Change Policy Through Energy Efficiency, Renewable Portfolio Standards, and Strategic Transmission System Investments*, 34 VT. L. REV. 711, 719, 767 (2010).

181. AM. WIND ENERGY ASS'N, WIND ENERGY FACTS: CALIFORNIA 1 (2012), *available at* http://www.awea.org/learnabout/publications/factsheets/factsheets_state.cfm.

182. WISER & BOLINGER, *supra* note 153, at 20.

183. *See Renewable Portfolio Standard Policies*, DSIRE: DATABASE OF ST. INCENTIVES FOR RENEWABLES AND EFFICIENCY (Sept. 2012), http://www.dsireusa.org/documents/summarymaps/RPS_map.pdf.

184. CAL PUB. UTIL. CODE § 399.11(a) (Deering 2012).

185. *See* Jim Rossi, *Clean Energy and the Price Preemption Ceiling* 1, 3 (Fla. State Univ. Coll. of Law Pub. Law Research Paper No. 508, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1899026 (discussing the feed-in tariff system in California as one of the many approaches to encourage renewable power investment).

186. CAL. PUB. UTIL. CODE § 399.16(c) (Deering 2012).

187. *Id. See generally* Decision Implementing Portfolio Content Categories for the Renewable Portfolio Standard Program, PUB. UTILS. COMM'N OF THE STATE OF CAL. (Dec. 21, 2011), *available at* http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/156060.pdf (clarifying the final decisions on implementation).

the West. California has also 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.[188]

Southern California Edison is planning the biggest transmission project in California's history: the Tehachapi Renewable Transmission Project. It 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.[189] The California Public Utility Commission ("CPUC") approved the first phase of the project in March 2007, and construction of that phase is underway.[190] The next phase involves 173 miles of transmission lines.[191] The project will be very important for linking renewable energy to California demand centers. In June 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.[192] 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.[193] Despite the CPUC's approval of the project, Chino Hills sued to enforce its ability to grant right-of-way property rights, and to deny the CPUC's exclusive jurisdiction in this area. The state trial court held in 2010 that the CPUC had exclusive jurisdiction, the court of appeals affirmed that decision in September 2011, and the California Supreme Court denied

188. *See* BLACK & VEATCH CORP., RENEWABLE ENERGY TRANSMISSION INITIATIVE PHASE 1A § 1-1 (2008), *available at* http://www.energy.ca.gov/2008publications/RETI-1000-2008-002/RETI-1000-2008-002-F.PDF (describing the RETI initiative and its phases of implementation).

189. Ben Baeder, *Work Starts on Biggest Electrical Transmission Line Project in Southern California History*, PASADENA STAR-NEWS (Sept. 6, 2010), http://www.pasadenastarnews.com/ci_16008367.

190. *Tehachapi Renewable Segments 4-11*, S. CAL. EDISON, http://www.sce.com/PowerandEnvironment/Transmission/ProjectsByCounty/Multi-CountyProjects/TRTP4-11/tehachapi-4-11.htm (last visited Sept. 3, 2012).

191. *Id.*

192. Rick Needham, *Update: Investing Another $102 Million in the Alta Wind Energy Center*, GOOGLE GREEN BLOG (June 22, 2011, 7:30 AM), http://googlegreenblog.blogspot.com/2011/06/update-investing-another-102-million-in.html.

193. *California Utility Signs Contracts for 237MW of Solar*, GREEN ECON. (June 23, 2011), http://uk.ibtimes.com/articles/20110623/california-utility-signs-contracts-237mw-solar.htm.

review in January 2012.[194] During the pendency of the appeals, however the CPUC stopped construction on the project for purposes of conducting additional review for the portion of the project through Chino Hills.[195]

As an electricity importer, California will likely also need to rely on neighboring states to meet its renewable energy needs, though the current structure of the RPS limits the amount that can be generated outside of California.[196] 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.[197] As of June 2012, Oregon had 2,820 MW of wind power online, ranking it seventh in the nation, and deriving 7.1% of its electricity from wind.[198] In 2007, Oregon required its largest electric utilities (PacifiCorp, Portland General Electric, and the Eugene Water and Electric Board) to ensure 5% of their retail electricity was renewable by 2011, and the utilities met this standard.[199] The requirement increases to 15% by 2015, 20% by 2020, and 25% by 2025.[200] Smaller utilities will also have to meet renewable energy standards, but the percentage of renewable energy is either 5% or 10% based on the size of the utility.[201] Companies in Oregon that do not comply with the RPS are subject to a fine.[202] In 2010, Oregon began a pilot program for solar feed-in tariffs that offered payments by three participating utilities to

194. *See Supreme Court Rejects Chino Hills Appeal; Fate Now Rests With PUC*, SAN BERNADINO COUNTY SENTINEL (Jan. 7, 2012), http://sbsentinel.com/2012/01/supreme-court-rejects-chino-hills-appeal-fate-now-rests-with-puc/ (chronicling the opposition of Chino Hills residents to the Tehachapi line and the fate of their attempts to legally bar construction).

195. *Id.*

196. CAL. PUB. UTIL. CODE § 399.16 (Deering 2012); *See, e.g.*, Scott Streater, *California Power Demand Drives Expansion of Utah Wind Farm*, LAND LETTER, 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).

197. Cassandra Profita, *Why Oregon Imports Power from Fossil Fuels and Exports Renewable Energy*, OR. PUB. BROADCASTING: ECOTROPE (June 1, 2011 3:26 PM), http://ecotrope.opb.org/2011/06/why-oregon-imports-power-from-fossil-fuels-and-exports-renewable-energy/.

198. AM. WIND ENERGY ASS'N, *supra* note 153, at 1, 7; AM. WIND ENERGY ASS'N, WIND ENERGY FACTS: OREGON 1 (2012), *available at* www.awea.org/learnabout/publications/factsheets/upload/2Q-12-Oregon.pdf.

199. OR. REV. STAT. § 469A.052 (2012).

200. *Id.*

201. *Id.* § 469A.055.

202. *Id.* § 469A.200.

owners of solar energy systems for electricity produced by solar power.[203] Through 2014, the payment rates are between $0.30 and $0.37/kWh.[204] Oregon also has both tax credits for renewable energy–equipment manufacturers[205] and "community renewable energy feasibility funds"[206] 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.[207] 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."[208] To address these issues, the Governor created the Oregon Energy Planning Council ("OEPC") in 2008.[209] The first OEPC report, in December 2010, recommended "the state move forward with developing a comprehensive energy strategy to maintain its leadership in energy planning, conservation, and new renewable technology."[210] The report made specific recommendations to improve Oregon's transmission line–siting process, including the creation of a stronger link between the state PUC and the state Energy Facility Siting Council to (1) better address the public's concerns regarding the

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203. Participating utilities are Portland General Electric, Pacific Power & Light, and Idaho Power Company. *See* OR. PUB. UTIL. COMM'N, SOLAR INCENTIVE RATE PILOT PROGRAM (2012), *available at* http://www.oregon.gov/puc/solar/SOLARINCENTIVEPILOTPROGRAM81612.pdf (explaining the upcoming round of the program in October 2012); *Solar Feed in Tariff: Frequently Asked Questions*, ENERGY TRUST OF OR. (Oct. 28, 2010), http://energytrust.org/library/resources/FIT_FAQ.pdf.

204. OR. ENERGY PLANNING COUNCIL, OR. DEP'T OF ENERGY, OREGON ENERGY PLANNING REPORT 20 (2010), *available at* 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 opened on October 1, 2011. Subsequent re-openings will take place every six months until the capacity for the program is full. *See* OR. PUB. UTIL COMM'N, *supra* note 203; *Oregon: Pilot Solar Volumetric Incentive and Payments Program*, DSIRE: DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=OR134F&re=1&ee=1 (last updated Sept. 21, 2012) (analyzing Oregon's incentives for renewables and efficiency).

205. OR. REV. STAT. § 315.341 (2011).

206. *Renewable Energy Grant: CREFF*, OR. DEP'T OF ENERGY, http://www.oregon.gov/ENERGY/RENEW/Pages/CREFF.shtml (last visited Aug. 25, 2012).

207. *See* PAUL HOOBYAR, WATERSHED INITIATIVES, LLC, THE RATIONALE FOR ADDRESSING OREGON'S REGULATORY PROCESS FOR ELECTRIC TRANSMISSION SITING: "HOW CAN OREGON IMPROVE ITS TRANSMISSION SITING PROCESS" 1–2 (2010), *available at* http://www.oregon.gov/ENERGY/RENEW/OEPC/docs/RationaleForEPCtoAddressORSitingRegfinal.pdf (explaining ways to improve Oregon's transmission-siting process).

208. *Id.* at 2.

209. OR. ENERGY PLANNING COUNCIL, *supra* note 204, at 5.

210. *Id.*

necessity of new transmission lines, (2) create new regulations to balance the objectives of multiple affected state agencies, (3) develop clear siting standards to make the application process both more predictable and better able to realize the public benefits of new transmission, (4) eliminate the lack of communication and multiple levels of review by different state agencies, and (5) create a "phased study approach" that allows applicants to move forward in their applications while various studies are being conducted.[211]

As noted above, Oregon has exported approximately half of its wind-generated power to California since 1998.[212] As a result, Oregon imports much of its electricity from other Western states such as coal-fired power from Montana and Wyoming.[213] 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.[214] The $2 billion project has received $100 million in funding from Google[215] as well as a $1.3 billion loan guarantee from the DOE.[216] The wind farm has received transmission rights, and is slated to become operational by September 2012;[217] 100% of the power generated from this farm will be exported to California.[218]

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.[219] This occurred in the Pacific Northwest in 2011, with 100,000 MWh curtailed after a particularly wet winter, rapidly warming spring, and low electricity demand for that time of year.[220] The massive amounts of hydroelectric power

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211. *Id.* at 5–6, 27–31.

212. Profita, *supra* note 197.

213. *Id.*

214. Rick Needham, *Shepherding The Wind*, GOOGLE BLOG (April 18, 2011), http://googleblog.blogspot.com/2011/04/shepherding-wind.html.

215. Wallace Witkowski, *Google, Others Invest $500 Mln in GE Wind Farm*, MARKET WATCH (Apr. 18, 2011, 1:21 PM), http://www.marketwatch.com/story/google-others-invest-500-mln-in-ge-wind-farm-2011-04-18-1320310.

216. Ben Blackwell, *DoE Grants $1.3bn Loan Guarantee for Oregon Wind Farm*, RECHARGE (Dec. 17, 2010), http://www.rechargenews.com/energy/wind/article239811.ece.

217. *Id.*

218. *Id.*

219. William Pentland, *Transmission Bottlenecks Bad News for Renewable Energy,* FORBES BLOG (May 3, 2011, 11:33 PM), http://blogs.forbes.com/williampentland/2011/05/03/transmission-bottlenecks-bad-news-for-renewable-energy/.

220. 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; Ted Sickinger, *The Bonneville Power Administration Punches Back in Wind*

swamped Bonneville Power Association's ("BPA") electric grid, causing BPA to curtail wind energy.[221] 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.[222] 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.[223] BPA contended that such actions would increase its own customers' rates, which would not be fair since most power is sold out of state.[224] 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 FPA.[225]

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 interstate transmission, it will affect Oregon, California, and the entire Pacific Northwest, as shown by the difficulties of utilizing the BPA grid. California is certainly acting as a "laboratory of democracy"[226] with its aggressive RPS, just as it has in many other areas of environmental protection, including vehicle emissions, smog, water-resource protection, and chemical regulation. In those areas, however, California could experiment and make progress on its own.

Versus Water Fight, OREGONLIVE.COM (July 20, 2011), http://www.oregonlive.com/business/index.ssf/2011/07/the_bonneville_power_administr.html; 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/.

221. Trabish, *supra* note 220. Some blame the problem with curtailment on the need to protect salmon from elevated levels of dissolved gas in water spilling over the hydro dams; others, on a failure to properly integrate wind into the BPA system. BPA is an agency of the DOE, which markets wholesale electricity from thirty-one 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*, 238 DAILY ENV'T REP. (BNA) A-12 (Dec. 12, 2011).

222. Trabish, *supra* note 220.

223. Sickinger, *supra* note 220.

224. *Id.*

225. Garner, *supra* note 221.

226. *See supra* note 151 and accompanying text (identifying innovative state policies in social security, health care reform, environmental protection, and immigration).

In the area of renewable energy, because of its dependence on outside sources of electricity and a transmission system to bring that power to the state, it must rely on other states, establish regional arrangements, seek federal assistance, and 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 both rely on their neighbors for energy imports, exports, and transmission and answer to the federal government on rate and discrimination issues, Texas has created an independent nation-state with regard to electricity transmission. Texas's electricity independence began shortly after the passage of the FPA in 1935, when utilities in Texas chose to remain wholly intrastate so as to not subject themselves to Federal Power Commission (now FERC) jurisdiction.[227] During World War II, these intrastate utilities began to interconnect, forming an intrastate system known as the Texas Interconnected System ("TIS").[228]

In 1970, the 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 NERC.[229] ERCOT manages 85% of Texas's electric grid.[230] 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."[231] Thus, even though there are power lines that connect ERCOT to the rest of the United States, because power does not regularly flow between ERCOT and the rest of

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

228. *Id.*

229. *Id.* at 11, 12.

230. *About ERCOT*, ERCOT, http://www.ercot.com/about/ (last visited Sept. 1, 2012); *see also* Cottonwood Energy Co., LP, 118 FERC ¶ 61,198 (Mar. 15, 2007) (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).

231. Dworkin et al., *supra* note 16, at 540; *see* Cottonwood Energy Co., LP, 118 FERC ¶ 61,198 ("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.").

the country, ERCOT remains independent.[232] 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.

Wind development in Texas has been rapid. As of March 2012, Texas by far led the nation with 10,684 MW of wind power online.[233] In 2010, wind resources generated 6.4% of Texas's electricity. But wind curtailment was also a problem, with 8% of wind curtailed in 2010, making transmission a particularly salient issue.[234] Texas promotes wind projects located primarily in the western and Panhandle regions by allowing counties and other organizations to offer tax abatements as a developer incentive to build wind projects.[235] For example, in July 2011, Young County agreed to a structured tax abatement with Gamesa Energy, an international wind farm developer, that would allow the company to build a wind farm and waive taxes.[236] If the wind farm is later sold to a nontaxable entity, Gamesa will pay a portion of the abated taxes back to the county.[237] While Texas established a RPS goal of installing 10,000 MW of renewable capacity by January 1, 2025 (a goal it has already surpassed), wind projects were driven not only by the RPS but also by the relative economic value of wind power in Texas at that time compared to other types of electricity generation.[238]

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232. *See* Fleisher, *supra* note 227, at 12–14, 20 (explaining that ERCOT has minimal electricity transfers across state lines, but that ERCOT is linked by two asynchronous connections to Oklahoma).

233. AM. WIND ENERGY ASS'N, AWEA U.S. WIND INDUSTRY FIRST QUARTER 2012 MARKET REPORT 7 (2012), *available at* http://www.awea.org/learnabout/publications/reports/upload/AWEA_First_Quarter_2012_Market_Report_Public.pdf.

234. WISER & BOLINGER, *supra* note 153, at 9 tbl.1, vii–viii.

235. Stahl et al., *supra* note 168, at 137–39. Although a 2008 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.* at 139; *see* TEX. TAX CODE ANN. § 313.008 (West 2008) (identifying wind generation projects as requiring a Comptroller report).

236. Commissioners Court Minutes, Young County, Texas (July 11, 2011), http://www.co.young.tx.us/ips/export/sites/young/downloads/COMMISSSIONERS_MINUTES_-_07-11-11.pdf.

237. *Id.*

238. *See* TEX. UTIL. CODE ANN. § 39.904(a) (West 2009) ("[T]he commission shall establish a target of 10,000 megawatts of installed renewable capacity by January 1, 2025."); Miriam Fischlein et al., *Policy Stakeholders and Deployment of Wind Power in the Sub-national Context: A comparison of Four U.S. States*, 38 ENERGY POL. 4429, 4432, 4437 (2010); *see also supra* note 233 (identifying that Texas has installed 10,684 MW of wind power)

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 ("TPUC") to plan transmission facilities in advance of renewable energy–generation facilities.[239] The resulting five competitive renewable energy zones ("CREZs") that 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.[240] To build out the identified transmission projects, the TPUC assigned them to various transmission service providers ("TSPs") for completion.[241]

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,[242] and outside the state certificate of convenience and necessity process.[243] Because it was a private or "merchant" line, NextEra did not have eminent domain authority, and instead acquired the land "by paying large, undisclosed sums to landowners."[244] Running from NextEra's wind farms in Abilene, Texas to a substation in Comfort, Texas, the 200-mile-plus, 345 kV line allows NextEra to bring its 850 MW of wind from western Texas to the load centers.[245] The line was built quickly, with the planning and construction processes completed in less than eighteen months.[246] 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.[247] In October 2010, ERCOT's CEO, H.B. Doggett, predicted "several

239. Stahl et al., *supra* note 168, at 136; *see also* 16 TEX. ADMIN. CODE § 25.174 (2009) (explaining implementation of Competitive Renewable Energy Zones).

240. PUB. UTIL. COMM'N OF TEX. – CREZ, http://www.texascrezprojects.com/ (last visited Sept. 2, 2012).

241. 16 TEX. ADMIN. CODE § 25.174(a)(2)(C), (c)(1) (2009).

242. 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.

243. Lorie Woodward Cantu, *Texas High Wires: A Balancing Act for Private Landowners*, TEX. WILDLIFE, July 2009, at 25, 30, *available at* http://clearviewalliance.org/docs/Texas%20High%20Wires%20article,%20electronic%20copy,%206-12-09.pdf.

244. Kate Galbraith, *Fighting the Power Lines to Protect Hill Country Vistas*, TEX. TRIB. (Sept. 9 2010), http://www.texastribune.org/texas-energy/wind-energy/fighting-power-lines-protect-hill-country-vistas/.

245. O'Grady, *supra* note 242.

246. MICHAEL O'SULLIVAN, NEXTERA ENERGY, BUILDING THE NEXT ERA OF CLEAN ENERGY: NEXTERA ENGERY RESOURCES 2010–2014 30 (2010), *available at* http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NDQ0MTd8Q2hpbGRJRD0tMXxUeXBlPTM=&t=1.

247. Lynn Doan, *ERCOT CEO Predicts Private Transmission Build-out in Texas' Future*, SNL ELECTRIC UTIL. REP., Nov. 1, 2010.

merchant and private transmission lines will surface across Texas to carry wind-generated electricity to market."[248]

According to the DOE, the success of this project has directly resulted in less wind power curtailment in 2010 than there was in 2009.[249] 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 almost 25% of total demand met by wind power.[250] However, a side effect of the project may be that landowners will expect utilities to offer more money for transmission line easements, leading to an increase in siting costs, litigation, and construction delays.[251] 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 buildout.[252] 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.[253] Despite the offer, on January 24, 2011, the CREZ line received a final CCN, and construction began on January 19, 2012.[254]

Thus, Texas is an important federalism example for electric transmission as it comes closest to acting 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. For instance, some stakeholders had hoped that ERCOT would use the planning process to spur the development of 765 kV lines instead of 345 kV lines to accommodate future renewable

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248. *Id.*

249. WISER & BOLINGER, *supra* note 153, at viii. 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, NAT'L RENEWABLE ENERGY LAB., WIND ENERGY CURTAILMENT CASE STUDIES MAY 2008 – MAY 2009, at1 (2009), *available at* http://www.nrel.gov/docs/fy10osti/46716.pdf.

250. Jeffrey Ryser, *NextEra Builds a Line in 10 Months Hoping to Cash In on Wind in Texas*, ELECTRIC UTIL. WK., Nov. 30, 2009, at 1, *available at* 2009 WLNR 25170062.

251. O'Grady, *supra* note 242.

252. Lynn Doan, *Texas Utilities, Consumers Skeptical of NextEra Offer of Transmission Line*, SNL POWER DAILY, Sept. 14, 2010.

253. *Id.*

254. *Big Hill to Kendall Line*, PUB. UTIL. COMM'N OF TEX. – CREZ, http://www.texascrezprojects.com/page113462032.aspx (last visited Sept. 3, 2012).

energy growth and electricity demand despite the short-term additional expense for such lines.[255] Instead, despite the benefits of the 765 kV lines for renewable energy and reliability in general, the state, like most of the country, remains without them.[256]

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 participate in regional collaborations for planning new transmission lines and operating regional electric grids—and many utilities and states have done so. Although participation in these regional organizations is currently voluntary, and they 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 operating. This Section discusses the existing RTOs, 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 ISOs and 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.[257] Order 888 states, "[W]e 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

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255. *See, e.g.*, BRENDAN KIRBY, EVALUATING TRANSMISSION COSTS AND WIND BENEFITS IN TEXAS: EXAMINING THE ERCOT CREZ TRANSMISSION STUDY 8–9 (2007), *available at* http://www.consultkirby.com/files/Evaluating_Transmission_Costs_In_Texas.pdf (discussing regulatory, planning, and cost barriers to 765 kV transmission lines in Texas); *see also* AM. ELEC. POWER, INTERSTATE TRANSMISSION VISION FOR WIND INTEGRATION 5 (2007), *available at* http://www.awea.org/documents/issues/upload/windtransmissionvisionwhitepaper.pdf (discussing benefits of 765 kV lines for Texas and other parts of the country to maximize the development of wind resources).

256. *See* AM. ELEC. POWER, *supra* note 255, at 8 (map showing existing 765 kV lines in PJM region and vision for new 765 kV lines throughout the country to create a transmission superhighway for wind); TEX. COMPTROLLER OF PUB. ACCOUNTS, THE ENERGY REPORT 342 (2008), *available at* http://www.window.state.tx.us/specialrpt/energy/pdf/96-1266EnergyReport.pdf (stating that the ERCOT grid contains 38,000 miles of transmission lines, including 8,100 miles of 345 kV lines, 16,000 miles of 138 kV lines, and 11,500 miles of 69 kV lines).

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

mitigate market power."[258] In 1999, FERC issued Order 2000 and advanced the formation of RTOs.[259] 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. Instead, participation was voluntary.[260]

As noted earlier, there are six RTOs under FERC jurisdiction across the country, some of which are single-state entities while others cover multiple states.[261] 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-tariff filings with FERC to govern transmission."[262] 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.[263] These western states are, however, part of more loosely formed power organizations, including the Western Electricity

258. Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities, 75 FERC ¶ 61,080, p. 52 (Apr. 24, 1996).

259. Regional Transmission Organizations, 89 FERC ¶ 61,285 (Dec. 20, 1999).

260. *See* Midwest ISO Transmission Owners v. FERC, 373 F.3d 1361, 1365 (D.C. Cir. 2004) (noting that participation was voluntary).

261. Dworkin et al., *supra* note 16, at 540. *See also supra* notes 105–09 and accompanying text (discussing RTOs and ISOs).

262. BOSSELMAN ET AL., *supra* note 257, at 656.

263. *Id.*; *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*, N. TIER TRANSMISSION GROUP, http://www.nttg.biz/site/ (last visited 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 3,000 MW of installed wind generation capacity. *See* BONNEVILLE POWER ADMIN., BPA FACTS (2010) *available at* 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), a power marketing administration within the DOE that has 17,000 miles of transmission lines that 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*, W. AREA POWER ADMIN., http://ww2.wapa.gov/sites/western/newsroom/FactSheets/Pages/factsabout.aspx (last visited Sept. 5, 2012). 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 Regional Transmission Expansion Planning*, W. GOVERNORS' ASS'N, http://www.westgov.org/initiatives/rtep (last visited Sept. 27, 2012).

Coordinating Council ("WECC")[264] and the Western Area Power Administration ("WAPA").[265]

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, within each individual state. Thus, this Section discusses (1) MISO (which, as a reminder, is the RTO covering a region of midwestern states including Minnesota, North Dakota, and Iowa)[266] and (2) WECC and WAPA.[267] Although ERCOT in Texas and CAISO in California fill 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. Midwest Independent System Operator

MISO applied for and was granted status as an RTO in December 2001.[268] 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."[269] MISO covers portions of thirteen states and Manitoba.[270] As of June 2011, MISO was comprised of thirty-five members that own transmission lines, including Xcel Energy (through its wholly owned subsidiary Northern States Power Company), Ameren, Mid-American Energy, and Great

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264. *See About WECC*, W. ELEC. COORDINATING COUNCIL, http://www.wecc.biz/About/Pages/default.aspx (explaining composition of WECC).

265. *See Facts About Western*, *supra* note 263.

266. *Corporate Information*, MIDWEST ISO, (Sept. 2012), *available at* https://www.midwestiso.org/Library/Repository/Communication%20Material/Corporate/Corporate%20Fact%20Sheet.pdf.

267. *See supra* notes 263–65 (discussing the WECC and WAPA).

268. Midwest Indep. Transmission Sys. Operator, Inc., 97 FERC ¶ 61,326, (Dec. 20, 2001); *see also* Midwest Indep. Transmission Sys. Operator, Inc., 103 FERC ¶ 61,169 (May 14, 2003) (denying rehearing of the December 20, 2001 order granting RTO status to MISO).

269. Midwest Indep. Transmission Sys. Operator, Inc., 97 FERC ¶ 61,326.

270. Press Release, Midwest ISO, Annual Meeting Addresses Energy Challenges (Apr. 20, 2011), *available at* https://www.midwestiso.org/AboutUs/MediaCenter/PressReleases/Pages/AnnualMeetingAddressesEnergyChallenges.aspx. For a map of MISO coverage, see *Corporate Information*, *supra* note 266 (indicating that MISO covers all or parts of Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Montana, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin).

River Energy.[271] On June 20, 2011, MISO set a record demand peak of 103,246 MW, surpassing the previous record set in 2006.[272] In total, the MISO footprint serves over 38 million people.[273] Coal is the most prominent fuel source in the MISO region, but over 10,000 MW of wind is installed in the MISO area.[274] In 2009 an estimated 2.2% of wind generation was curtailed, increasing to 4.4% curtailed in 2010 in the MISO footprint.[275]

Although MISO cannot itself adopt or impose an RPS, many of its members have; 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."[276] The Upper Midwest Transmission Development Initiative was a subregional 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.[277] The creation of REZs is significant because they were approved by each state and thus allowed MISO to engage in long-term planning of zones that already had state support. Outputs from this study and analysis of other MISO-state RPS goals then served as 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."[278]

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271. *MISO: Members by Sector*, MIDWEST ISO (Aug. 2012), 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 Aug. 30, 2012); MIDWEST INDEPENDENT TRANSMISSION SYSTEM OPERATOR, REGIONAL TRANSMISSION ORGANIZATION (RTO) RELIABILITY PLAN 25 (2011), *available at* https://www.midwestiso.org/Library/Repository/Procedure/MISO%20Reliability%20Plan.pdf.

272. Press Release, Midwest ISO, New Peak Demand Record Set in MISO Region (July 20, 2011), *available at* https://www.midwestiso.org/AboutUs/MediaCenter/PressReleases/Pages/NewPeakRecordSetinMISORegion.aspx.

273. *Corporate Information*, *supra* note 266.

274. *Id.*

275. RYAN WISER & MARK BOLINGER, LAWRENCE BERKELEY NAT'L LAB., 2010 WIND TECHNOLOGIES MARKET REPORT 54 (2011), *available at* http://www1.eere.energy.gov/wind/pdfs/51783.pdf.

276. *Regional Generation Outlet Study*, MIDWEST ISO, https://www.midwestiso.org/Planning/Pages/RegionalGenerationOutletStudy.aspx (last visited Aug. 30, 2012).

277. David Boyd, Chairman, Minn. Pub. Utils. Comm'n, Address at the NARUC Electricity Committee Meeting: Upper Midwest Transmission Development Initiative 3 (Feb. 16, 2009), *available at* http://www.narucmeetings.org/Presentations/Boyd.pdf.

278. MIDWEST ISO, RGOS PHASE I: PROCESS OVERVIEW 2 (2009), *available at* https://www.midwestiso.org/Library/Repository/Study/RGOS/RGOS%20I%20051409.pdf.

The project was led by MISO, and included the "assistance of state regulators and industry stakeholders."[279] The study was completed in phases, with Phase I "concentrat[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)."[280] Phase II expanded on this, looking at "renewable energy requirements for the entire MISO footprint, resulting in the need for an exhaustive transmission plan."[281] The final report, incorporating both near-term and twenty-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."[282] Each of these scenarios developed different grid architectures, one expanding the existing 345 kV high-voltage network and another laying out a 765 kV grid.

Also in 2010, MISO proposed a MVP pricing model, which was designed in part to encourage investment in transmission by facilitating the ability of investors to recoup costs.[283] After consideration, FERC approved the MVP model in December 2010, and the MISO Board approved the projects in December 2011.[284] The pricing model allows regionally oriented projects to have their costs allocated across the MISO region on a "postage-stamp" (load-ratio share) basis, and is estimated to cost an additional $0.62 to $0.80/kWh.[285] To be considered for MVP status, a proposed project

279. MIDWEST ISO, REGIONAL GENERATION OUTLET STUDY 1 (2010), *available at* https://www.midwestiso.org/Library/Repository/Study/RGOS/Regional%20Generation%20Outlet%20Study.pdf.

280. MIDWEST ISO, REGIONAL GENERATION OUTLET STUDY: PHASE I EXECUTIVE SUMMARY REPORT 5 (2009), *available at* https://www.midwestiso.org/Library/Repository/Study/RGOS/RGOS_I_Executive_Summary_Report_FINAL.pdf.

281. *Regional Generation Outlet Study*, *supra* note 276.

282. MIDWEST ISO, *supra* note 279.

283. Letter from Arthur W. Iler, Assistant Gen. Counsel, Midwest ISO, to Kimberly D. Bose, Sec'y, FERC 8 (July 15, 2010), *available at* https://www.midwestiso.org/Library/Repository/Study/Entire%20Transmission%20Cost%20Allocation%20Filing.pdf.

284. Midwest Indep. Transmission Sys. Operator, Inc., 133 FERC ¶ 61,221 (Dec. 16, 2010); Press Release, Midwest ISO, MISO Board Approves 215 New Transmission Projects (Dec. 8, 2011), *available at* https://www.midwestiso.org/AboutUs/MediaCenter/PressReleases/Pages/MISOBoardApproves215NewTransmissionProjects.aspx (discussing approval of 215 new transmission infrastructure projects, including 16 new MVPs).

285. Letter from Arthur W. Iler, *supra* note 283, at 2. "Postage stamp" pricing is when the costs of the project are allocated to the utilities in the MISO region based on the utilities' percentage of the total energy load. SCOTT HEMPLING, NAT'L REGULATORY RESEARCH INST., POSTAGE STAMP TRANSMISSION PRICING: THE SEVENTH CIRCUIT REVERSES FERC 2 (2009) defines "postage stamp rate" as: "Every transmission customer pays a single rate for any transmission transaction within a defined region, regardless of the contractual origin and contractual

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.[286] In creating a new cost-allocation methodology for MVP projects, "Midwest ISO projects that the MVP starter projects developed within the first five to ten 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."[287]

One of the MVP projects is one of the CapX2020 lines described in Part II.B.1.[288] This will provide a huge financial benefit for the utilities proposing the CapX2020 lines, because 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.[289] This would likely leave less than $100 million of the bill to be paid directly by the CapX2020 utilities, which make up approximately 14% of MISO's energy production.[290] For this project, the allocation of cost is a particularly important issue, and in May 2010 the CapX2020 utilities informed the Minnesota Public Utilities Commission that it would delay construction by two years due to cost-allocation concerns.[291]

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destination of the electricity transmitted. That rate is the same rate for every customer." In this way the rate is similar to the rate paid for postage stamps in that it costs the same amount to mail a letter within the United States regardless of its origin, destination, or distance traveled. For information on the cost estimates, see MIDWEST ISO, MISO TRANSMISSION EXPANSION PLAN 2011, at 6 (2011), *available at* https://www.midwestiso.org/Planning/TransmissionExpansion Planning/Pages/MTEP11.aspx. In 2010, the average U.S. household used a little less than 1,000 kWh per month. *Frequently Asked Questions: How Much Electricity Does an American Home Use?*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3 (last updated Dec. 6, 2011).

286. Letter from Arthur W. Iler, *supra* note 283, at 21–24.

287. *Id.* at 16.

288. MIDWEST ISO, TRANSMISSION EXPANSION PLAN 2010, at 264 (2010), *available at* https://www.midwestiso.org/Library/Repository/Study/MTEP/MTEP10/MTEP10%20Report.pdf.

289. Bob Geiger, *MISO Cost-allocation Formula Could Save CapX2020 Utilities $600M on Power Line*, FIN. & COMMERCE, July 17, 2010, *available at* http://www.dolanmedia.com/view .cfm?recID=612729.

290. *Id.*

291. *Id.*

Not all parties are happy with FERC's approval of the MVP model.[292] Some state commissions and MISO itself have argued that the rule is not broad enough and should allow costs to be passed on to neighboring RTOs as well.[293] 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.[294] On the other hand, Michigan interest groups have argued that the rule unfairly imposes costs for which Michigan utilities will see little benefit.[295] In general, 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."[296] Furthermore, these interest groups assert that "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."[297] The State of Michigan, utilities, and interest groups have filed a federal lawsuit challenging both FERC Order 1000 and MISO's cost-allocation structure, and some of the utilities have also threatened to leave MISO.[298]

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 that the PJM RTO had

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292. *See Many Players in MISO Join Challenge of MVP Allocation*, RESTRUCTURING TODAY (Jan. 19, 2011), http://www.restructuringtoday.com/public/12883.cfm; *see also FERC Hears from MISO Members Unhappy with MVP*, RESTRUCTURING TODAY (Jan. 18, 2011), http://www.restructuringtoday.com/public/12871print.cfm (noting that such parties included the Organization of MISO states and two of its members).

293. *See Many Players in MISO Join Challenge of MVP Allocation*, *supra* note 292 (explaining that the "bulk of the MISO Transmission Owners also want to see FERC allow MVP costs to be allocated to exports into [the PJM RTO]"); *see also FERC Hears from MISO Members Unhappy with MVP*, *supra* note 292 (noting that OMS believes that the neighboring PJM RTO should cover a portion of the costs).

294. *See FERC Hears from MISO Members Unhappy with MVP*, *supra* note 292 ("Without significant offshore wind development, OMS believes the neighbor RTO would draw much of its wind energy to meet state mandates from MISO and they should have to pay for it.").

295. *Many Players in MISO Join Challenge of MVP Allocation*, *supra* note 292.

296. *Id.*

297. *Id.*

298. *See* Daniel Cusick, *Midwest Grid Needs Upgrades for Wind Power, but Cost-sharing Plan Draws Fire in Michigan*, GOVERNORS' WIND ENERGY COALITION (Mar. 12, 2012), http://www.governorswindenergycoalition.org/?p=1531 (describing the federal lawsuit filed "on behalf of the MISO Northeast Transmission Customer Coalition—which includes Attorney General Bill Schuette and rate-based utilities Detroit Edison and Consumers Energy").

implemented.[299] For "backbone" transmission projects larger than 500 kV, which are best able to move large amounts of electricity, the PJM process provided that all customers within PJM would pay a portion of the costs of those projects regardless of their location, based on the assumption that the upgrades would benefit all customers.[300]

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."[301] 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 quantification or analysis, however, the court found it was likely that this small benefit was grossly disproportionate to the allocated costs.[302]

In contrast to PJM's automatic pro rata cost sharing for large reliability upgrades, MISO's MVP methodology attempted "to ensure fair allocation of the cost to the beneficiaries of a regionally beneficial transmission investment."[303] The approved seventeen 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.[304] Furthermore, as opposed to the PJM cost-sharing method which looked only at reliability benefits, MISO explicitly considered additional benefits such as "advancing state and federal energy public policies, reductions in production costs and losses, reduced capacity requirements, and increased reliability, which accrue broadly to customers across the Midwest ISO region."[305]

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299. *FERC Hears from MISO Members Unhappy with MVP*, *supra* note 292.

300. STAN MARK KAPLAN & ADAM VANN, CONG. RESEARCH SERV., ELECTRICITY TRANSMISSION COST ALLOCATION 7 (2010), *available at* http://www.wiresgroup.com/images/WIRES_Report_CostAlloc_041910.pdf.

301. Ill. Commerce Comm'n v. FERC, 576 F.3d 470, 476 (7th Cir. 2009).

302. *Id.* ("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.").

303. MIDWEST ISO, 2010 ANNUAL REPORT 12 (2010), *available at* https://www.midwestiso.org/_layouts/miso/ecm/redirect.aspx?id=99072.

304. Letter from Arthur W. Iler, Assistant Gen. Counsel, Midwest ISO, to Kimberly D. Bose, Sec'y, FERC 3–4 (March 27, 2012), *available at* https://www.midwestiso.org/Library/Repository/Tariff/FERC%20Filings/2012-03-27%20Docket%20No.%20ER10-1791-000.pdf.

305. Letter from Arthur W. Iler, *supra* note 283, at 13–14.

Estimating benefits across the region is an inexact science, but even the Seventh Circuit acknowledged that precision is not necessary, only an effort to align cost and benefits.[306] 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 . . . 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 . . . the Commission can approve PJM's proposed pricing scheme on that basis.[307]

Therefore, in its effort to correlate costs and benefits, and through its findings to that effect,[308] the MISO's MVP pricing methodology may be more defensible under the Seventh Circuit's cost-benefit analysis.

2. Western Electricity Coordinating Council and Western Area Power Administration

Unlike the midwestern states that make up MISO, the majority of states in the Western Interconnection do not belong to an organized market, but are loosely joined within WECC, which focuses on ensuring electric reliability in the region.[309] In 2009, WECC was awarded $14.5 million from the ARRA to use for transmission planning across the Western Interconnection, comprised of all or part of fourteen states (along with the Canadian Provinces of Alberta and British Columbia and Northern Baja Mexico).[310] Managed by the Transmission Expansion Planning Policy Committee, this project will allow the WECC region to assess future transmission needs, engage in stakeholder planning, and create both ten- and twenty-year transmission plans.[311] The WECC also serves as the umbrella organization for many subregional transmission-planning efforts within the Western Interconnection.[312] WECC is responsible for

306. *Ill. Commerce Comm'n*, 576 F.3d at 477.

307. *Id.*

308. Letter from Arthur W. Iler, *supra* note 283, at 24–26.

309. *See* W. ELECT. COORDINATING COUNCIL, COMPANY OVERVIEW (2012), *available at* http://www.wecc.biz/About/Documents/WECC_FactSheet.pdf (providing a company overview of the coverage and purpose of the WECC).

310. *See id.* (listing areas included in the Western Interconnection); *see also Transmission Expansion Planning,* W. ELECT. COORDINATING COUNCIL, http://www.wecc.biz/Planning/TransmissionExpansion/Pages/default.aspx (last visited Sept. 1, 2012) (describing the receipt by WECC of funding from the DOE under the American Recovery and Reinvestment Act).

311. *Transmission Expansion Planning, supra* note 310.

312. *See* W. ELECT. COORDINATING COUNCIL, FREQUENTLY-ASKED QUESTIONS (FAQS) ABOUT TRANSMISSION PLANNING IN THE WESTERN INTERCONNECTION 2, *available at* http://www.wecc.biz/committees/BOD/TEPPC/External/RTEP_FAQs.pdf (indicating that the WECC subregional

ensuring that the electric grid is reliable within the Western Interconnection and that transmission access is fair. WECC worked with the Western Governors Association ("WGA") in 2009 to identify western renewable energy zones ("WREZs") and to work with stakeholders to identify transmission needs for the region.[313] The resulting report examined technological potential for wind, solar, biomass, geothermal, and hydropower across the western region.[314]

The WRA has worked to ensure that WREZs are developed and linked to transmission, but it finds current transmission planning in the region insufficient: "While some of these lines will reach WREZ hubs, most will remain inaccessible. Continued isolated procurement by individual utilities will not lead to major development of these renewable-rich areas and the requisite transmission."[315] The WGA commissioned a report that documented interviews with western utilities. The report found that, while the utilities were interested in developing WREZs near their service territories, they were not interested in developing more economically optimal WREZs not yet connected to transmission.[316] Additionally, the surveyed utilities that were not located in a state with an aggressive RPS did not believe that they would need to meet a high renewable energy target within the next ten to twenty years, highlighting the barriers that inconsistent federal and state policies pose for WREZ development and coordination.[317] The report also identified challenges in developing transmission lines across more than one state.[318] Utilities cited state differences in local siting procedures and cost-recovery risk with interstate projects as major barriers.[319] The future coordination and planning necessary to develop WREZs will depend on local utilities and state PUCs, as well as state and federal policies to promote renewable energy.

Another organization that fulfills a grid-management role similar to an ISO or an RTO is WAPA, which is a division of the DOE

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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")).

313. W. GOVERNORS' ASS'N & U.S. DEP'T OF ENERGY, WESTERN RENEWABLE ENERGY ZONES - PHASE I REPORT 2 (2009), *available at* http://www.westgov.org/wga/publicat/WREZ09.pdf.

314. *Id.* at 6.

315. *Id.* at 1.

316. *Id.* at 2.

317. *Id.*

318. *Id.*

319. *Id.*

that markets power.[320] WAPA markets hydroelectric power across fifteen states, including California, Minnesota, Montana, New Mexico, North Dakota, South Dakota, Texas, and Wyoming.[321] Additionally, WAPA operates and maintains 17,100 miles of transmission lines.[322] In its 2010 annual report, WAPA highlighted the need for new transmission construction to facilitate renewable energy.[323] 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.[324]

D. Summary

As shown in this Part, state policy governing renewable energy and transmission line siting, as well as the corresponding lack of significant federal policy, has a major influence on where and how transmission lines are 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, it is the midwestern and western states that have been most active in beginning to implement major transmission projects to develop and connect renewable resources to population centers on a regional basis. 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 highlights the challenges the United States faces in expanding the grid and incorporating renewable energy in light of the significant siting and permitting authority at the state level and the limited authority at the federal level. Part III also explores some policy options at the federal, regional, and state levels for addressing these challenges.

III. NEW DIRECTIONS FOR TRANSMISSION POLICY

A review of the various state policies and transmission projects and the development of regional RTOs shows that RTOs, particularly

320. *Facts About Western*, *supra* note 263.

321. *Id.*

322. *Id.*

323. W. AREA POWER ADMIN., ROADMAP FOR RENEWABLE ENERGY: ANNUAL REPORT 2010, at 4 (2010), *available at* http://ww2.wapa.gov/sites/western/newsroom/Documents/annrep10.pdf.

324. *Id.* at 14.

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. 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 multistate RTO that has taken major steps to integrate the RPSs 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 line siting shows that most of that authority still rests with the states. This makes it difficult to plan and build regional transmission lines. The federal government has little authority to influence the siting of lines in areas where states have been reluctant to site such lines as a result of stakeholder opposition. Although the EPAct 2005 and the FERC rules regarding NIETCs and federal backstop siting authority attempted to address this concern, courts have rejected FERC's efforts to exercise this authority.[325] 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 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. Options for Reallocating Siting Authority

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 existing models 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 in creating a more hospitable

325. *See* Piedmont Envtl. Council v. FERC, 558 F.3d 304, 313 (4th Cir. 2009), *cert. denied*, 130 S. Ct. 1138 (2010); *supra* notes 85–86 and accompanying text (discussing the *Piedmont* case).

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 either a "process preemption" approach using the current federal model for siting cell phone towers or a 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. We discuss below (1) the full preemption option, (2) the process preemption option, and (3) increased regional siting authority.

1. Federal Preemption of State Siting Authority

Clean energy advocates as well as some state utility regulators look 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 natural gas pipelines, where FERC (or its predecessor agencies) has served as the primary siting authority for over sixty years. Congress passed the Natural Gas Act ("NGA") in 1938, stating, "The 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."[326] 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.[327] This

326. 15 U.S.C. § 717 (2006); *see also* Donald H. Gaucher, *Federal Jurisdiction Over Natural Gas*, 1 HOUS. L. REV. 29, 31 (1963) (discussing the purpose of the Natural Gas Act).

327. *See* 15 U.S.C. § 717f(c)–(h) (2006) (requiring the certificate of public convenience and necessity); *see also* Robert R. Nordhaus & Emily Pitlick, *Carbon Dioxide Pipeline Regulation*, 30 ENERGY L.J. 85, 88–89 (2009) ("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

federal authority is noticeably absent in the realm of transmission line siting, with predicable consequences. As Professor Richard Pierce has noted, if FERC had not possessed the power to authorize expansion of natural gas transportation capacity, the gas-distribution system would be much less reliable and much more expensive than it is now.[328] He also notes that because the legal regime governing transmission lines still rests squarely with the states, that same level of cost control and reliability will remain elusive absent significant changes to the current system.[329]

Beyond the uncertain backstop authority that Congress granted FERC in the EPAct 2005, Congress 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 years to strengthen FERC's backstop authority in response to the judicial decisions limiting that authority under the EPAct 2005, passage of any of these or similar bills is unlikely at the present time.[330]

Despite its reluctance to increase federal siting authority for transmission lines, Congress has been willing to expand such federal authority in recent years in other areas where it apparently saw a greater need to override obstacles to siting energy-related facilities. Notably, although FERC has long had authority to site natural gas pipelines, state and local governments have traditionally assumed authority over siting liquefied natural gas ("LNG") terminals. LNG terminals receive shipments of LNG from foreign sources and regasify (i.e., heat the liquid natural gas to allow it to evaporate back into natural gas), store, and prepare the natural gas for distribution in domestic pipelines.[331] As a result of local and state opposition to the siting of such terminals,[332] Congress, in the EPAct 2005, granted

providing for exclusive and preemptive federal siting of interstate natural gas pipelines." (internal quotation marks omitted) (citing 15 U.S.C. § 717f(e)–(h) (2006)).

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

329. *Id.* at 333–34.

330. *See supra* notes 91–98 and accompanying text (discussing unsuccessful efforts by Congress to expand federal authority).

331. Christopher M. Crane, *State Authority in Siting of Liquefied Natural Gas Import Terminals*, 14 BUFF. ENVTL. L.J. 1, 4 (2006).

332. *See* 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) (suggesting that Congress passed the EPAct 2005 in recognition of state opposition to "impending FERC-certificated projects"); *see also* Jacob Dweck, David Wochner & Michael Brooks, *Liquefied Natural Gas (LNG) Litigation After the Energy Policy Act*

FERC exclusive authority to site the terminals.[333] The EPAct 2005 preempts relevant laws, including those that require more stringent standards for siting natural gas facilities.[334] Congress relied on its Commerce Clause power to preempt state authority and declared that "[t]he business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest . . . ."[335] The EPAct 2005 also streamlined the process for reviewing FERC's siting decisions for natural gas terminals by granting the federal courts of appeals (in whichever circuit the facility is located) exclusive jurisdiction.[336]

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of 2005: State Powers in LNG Terminal Siting, 27 ENERGY L.J. 473, 474 (2006) ("Energy infrastructure raises unique concerns, specifically in the post-September 11 environment. As a result, LNG 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 LNG terminals. The primary tools available to LNG opposition are the powers, embedded in various federal and state laws, which the states have to affect LNG 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 . . . .").

333. Energy Policy Act of 2005 §§311, 313, 15 U.S.C. § 717b(e)(1) (2006).

334. *Id.* For a summary of how the EPAct carved out a participatory role for the states in siting natural gas terminals, see Crane, *supra* note 331 at 32–33:

> 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. . . . [The] 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.

335. 15 U.S.C. §717(a) (2006)*; see also* William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547, 1553 (2007) ("The Energy Act turned the hierarchy upside down, replacing state and local LNG siting choice with a commenting role in a siting decision now made by the Federal Energy Regulatory Commission (FERC)."); Gregory J. Rigano, *The Solution to the United States' Energy Troubles is Blowing in the Wind*, 39 HOFSTRA L. REV. 201, 229 (2011) (outlining Congressional authority for this preemption under the Commerce Clause).

336. Rigano, *supra* note 335, at 230–31. *See also* Dweck et al., *supra* note 332, at 474 ("The EPAct 2005 amended the Natural Gas Act of 1938 (NGA) to streamline the process for approving 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

Adopting a federal preemption model to overcome the current barriers to transmission line siting could involve granting FERC full siting authority over new, high-voltage transmission assets that are necessary for 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 that are necessary for states to meet their RPS targets.[337]

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 now. 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,[338] the establishment of the Securities and Exchange Commission in 1934,[339] the Social Security Act of 1935,[340] and the Fair Labor Standards Act of 1938.[341] 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."[342] Unlike the most recent presidential and congressional elections, which were closely contested, Franklin

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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.").

337. *See* Matthew Slavin & 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 (suggesting that Congress "mimic the authority FERC currently possesses for siting of interstate natural gas pipelines and apply it to renewable energy projects").

338. National Industrial Recovery Act of 1933, Pub. L. No. 73-67, 48 Stat. 195 (codified at 15 U.S.C. § 703 (2006)) (protecting collective bargaining rights for unions), *invalidated by* A.L.A. Schechter Poultry Corp. v. United States, 295 U.S. 495 (1935); National Labor Relations Act of 1935, Pub. L. No. 74-198, 49 Stat. 449 (codified as amended at 29 U.S.C. § 151 (2006)) (prohibiting unfair labor practices).

339. Pub. L. No. 73-291, 48 Stat. 885 (codified as amended at 15 U.S.C. § 78d (2006)) (regulating the stock market to prevent abuses similar to those that led to the Great Depression).

340. Pub. L. No. 74-271, 49 Stat. 620 (codified at 42 U.S.C. § 301 (2006)) (repealed 1972) (providing retirement and death benefits).

341. Pub. L. No. 75-718, 52 Stat. 1060 (codified as amended at 29 U.S.C. § 201 (2006)) (requiring a minimum wage and overtime pay).

342. Samuel Lubell, *The Roosevelt Coalition*, *in* THE NEW DEAL: ANALYSIS & INTERPRETATION 129, 131 (Alonzo L. Hamby ed., 1969).

Roosevelt won reelection in a landslide in 1936, and his party enjoyed a majority in Congress.[343]

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.[344] The interstate natural gas industry was relatively new in the 1930s, with the first long-distance pipeline built in 1931. By 1935, states struggled to regulate interstate pipeline companies, particularly when it came to rates.[345] 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.[346] In response, Congress passed the NGA, which was designed to reduce this exploitation.[347]

The NGA was not, however, designed to strip states of their regulatory power.[348] Rather, it was intended to fill the regulatory gap that existed when natural gas passed from one state to another.[349] It was also designed to allow the federal government to encourage competition among pipelines and ensure an "adequate, reliable and reasonably-priced supply of natural gas for the entire nation."[350] As

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343. *Id.* at 143.

344. *See* Hirman Caton, *Progressivism and Conservatism During the New Deal, in* THE NEW DEAL AND ITS LEGACY: CRITIQUE AND REAPPRAISAL 177, 183 (Robert Eden ed., 1989) (noting that "New Dealers and Federalists . . . construed the fiscal and legislative powers of government as a distinct force supervening on the market"); 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 123, 131 (Robert Eden ed., 1989) (describing FDR's effective "nationalization of the political system"). *See generally* Ellis W. Hawley, *The New Deal and the Problem of Monopoly*, *in* THE NEW DEAL: ANALYSIS & INTERPRETATION 73 (Alonzo L. Hamby ed., 1969) (providing a broad overview of how New Deal programs regulated monopolies).

345. John T. Miller, Jr., *Competition in Regulated Industries: Interstate Natural Gas Pipelines,* 47 GEO. L.J. 224, 230 (1958). *See also* Gaucher, *supra* note 326, at 30–31 (explaining that local rate-setting arose as a problem shortly after the development of long-distance pipeline technology).

346. Miller, Jr., *supra* note 345, at 230.

347. *Id.* at 231.

348. Ralph Sargent, Jr., *Regulation of Natural Gas—Federal v. State*, 27 DICTA 216, 218 (1950) (quoting Panhandle E. Pipeline Co. v. Pub. Serv. Comm'n, 332 U.S. 507, 517–18 (1947)).

349. *Id.*; *see also* Alfred E. McLane, *Jurisdiction of the Federal Power Commission Over Production and Gathering of Gas*, 28 TUL. L. REV. 343, 343 (1954) (explaining that a primary purpose of the NGA was "to regulate activities of gas companies which had not been theretofore subject to regulation").

350. 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); Miller, Jr., *supra* note 345, at 232; *see also* 15 U.S.C. § 717f(g) (2006) (authorizing the

the Supreme Court has repeatedly declared, the NGA's purpose was "to protect consumers against exploitation at the hands of natural gas companies."[351] By comparison, today's sprawling electrical network and its high-voltage, long-distance transmission lines have grown from local, decentralized companies, municipal utilities, or rural electric cooperatives. The technology and industry are well established and in large part regulated so as to protect consumers from exploitation.

On the other hand, one might still look to the more recent federal preemption of LNG terminal siting in 2005 for a sign of hope for 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 considered establishing federal authority over siting LNG terminals for several reasons, including confusion over the siting powers of states and various federal agencies, concern for safety, and the need to ensure an adequate supply of natural gas.[352] Moreover, beginning in the 1970s, several states enacted specific restrictions on the siting of LNG facilities within their borders, resulting in legal challenges by gas distribution companies and pressure on Congress to act.[353] Other potentially relevant differences include the increase in natural gas prices leading up to 2005 and lower costs due to new technology developed to regasify and store LNG.[354]

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 site interstate transmission lines would strip states of a regulatory power they currently possess. Given the differences in the nature of

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Commission to "grant certificates of public convenience and necessity for service of an area already being served by another natural gas company").

351. Jane L. Bloom, *State Regulation of Liquefied Natural Gas Facilities Siting: A Case for Federal Preemption?*, 8 N.Y.U. REV. L. & SOC. CHANGE 7, 25 (1979) (quoting Fed. Power Comm'n v. La. Power & Light Co., 406 U.S. 621, 631 (1972)).

352. *See generally id.*

353. *Id.* at 13–14.

354. *See* Sheila Slocum Hollis, *Should We Site It Here? LNG, the Environment, and Federalism*, 2 ENVTL. & ENERGY L. & POL'Y J. 5, 6 (2007) (explaining the factors that influenced the development of the siting of LNG terminals). Since the development of shale gas, of course, natural gas prices have fallen significantly.

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 like the NGA or the new siting provisions for LNG terminals is presently a viable solution 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 adopted in the Telecommunications Act of 1996 ("TCA") for the siting of cell phone towers.[355] Professor Ashira Pelman Ostrow has discussed the current barriers to siting renewable energy facilities (as opposed to transmission lines) and advocates for retaining a mix of federal and local control, known as "process preemption,"[356] for the siting processes.[357] Ostrow contends that "[a]ggressive federal preemption regimes that exclude local decisionmakers from the siting process falter because local opposition, in contrast to local authority, cannot be preempted."[358]

Ostrow and Professor Patricia Salkin look favorably upon the TCA's Telecommunications Siting Policy, which leaves siting authority in local hands, but constrains local decisionmaking and provides federal remedies for those who are denied approval.[359] 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.[360] Before passage of the TCA, local opposition to cell phone tower siting often led to significant delays in permitting and construction of towers.[361] The Telecommunications Siting Policy's collaboration between federal and state decisionmaking has led to the siting of tens

355. *See* 47 U.S.C. § 332 (2006) (establishing local control but preempting some actions of state and local governments).

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

357. Salkin & Ostrow, *supra* note 146, at 1054.

358. Ostrow, *supra* note 356, at 291.

359. Salkin & Ostrow, *supra* note 146, at 1053.

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

361. Salkin & Ostrow, *supra* note 146, at 1088.

of thousands of telecommunications facilities,[362] a dramatic increase that has "contribut[ed] to the development of a national telecommunications network."[363] Ostrow notes that this structure's "hybrid federal-local framework" creates an interjurisdictional siting policy that balances national and local land use priorities and has encouraged local regulators to cooperate with land use developers.[364]

The TCA operates by balancing local concerns against broader national interests.[365] It prevents local authorities from banning facilities outright[366] and from "unreasonably discriminat[ing] among providers."[367] 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.[368] A party prohibited from siting a facility may take its claim to a federal court, where the claim will be decided on an expedited basis,[369] thus increasing "the legitimacy, consistency, and public acceptance of controversial siting decisions."[370] Although states are somewhat constrained by the TCA, they may decide whether, where, and how to site facilities in accordance with local preferences.[371]

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 that need 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 that Congress could adopt or modify in order to encourage interstate transmission corridors for increased grid reliability and/or to

362. *See* Salkin & Ostrow, *supra* note 146, at 1091 (describing the increase in the number of cell towers since the enactment of the TCA).

363. Ostrow, *supra* note 356, at 293.

364. *Id.* at 292–93.

365. Salkin & Ostrow, *supra* note 146, at 1082–83*; see also* ATC Realty, LLC v. Town of Kingston, 303 F.3d 91, 94 (1st Cir. 2002) (describing the TCA as balancing the national interest of "accelerat[ing] the deployment of telecommunications technology" with "the desire to preserve state and local control over zoning matters").

366. Salkin & Ostrow, *supra* note 146, at 1093.

367. *Id.* at 1090 (quoting 47 U.S.C. § 332(c)(7)(B)(i) (2006)).

368. *Id.* at 1093, 1095.

369. *Id.* at 1090.

370. Ostrow, *supra* note 356, at 293–94.

371. Salkin & Ostrow, *supra* note 146, at 1090.

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 that strands investment in renewable energy and hinders 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 states, and RTOs can use their own tools to encourage more effective interstate transmission development. These tools are discussed below.

3. Regional Siting Agencies

As noted earlier, although RTOs such as MISO are already engaged in interstate transmission line *planning*, the authority for actual *siting* of lines remains with the states. There is an opportunity through the EPAct 2005, however, to create regional transmission-siting agencies through interstate compacts.[372] The EPAct 2005 authorized three or more contiguous states to enter into an interstate compact, subject to approval by Congress, which would establish a regional transmission-siting agency to (1) determine need for future electric transmission facilities within those states, and (2) carry out the 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.[373]

So far, no states have entered into such compacts. But if states were to do so, it could allow for better and more efficient planning and construction of transmission lines, particularly regional transmission

372. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, § 216(i) (codified at 16 U.S.C. § 824p (2006)).

373. *Id.* To override a state compact: (1) the states must disagree; (2) there must be "notice and an opportunity for a hearing," 16 U.S.C. § 824p(i)(4) (2006); and (3) 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. § 824p(b)(1)(C). This only applies to lines within a NIETC (just as FERC's general backstop siting authority does).

lines. Unfortunately, there are few successful models in this area for states to follow. In one notable example, Congress granted states power to site low-level radioactive waste disposal facilities individually or through interstate compacts in the Low Level Radioactive Waste Policy Act of 1980 and its 1985 Amendments ("LLW Act").[374] 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.[375] 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.[376] After the LLW Act's enactment, many states entered into compacts, but the process resulted in no new waste facilities.[377] In the 1985 Amendments, Congress provided financial benefits to states that met a series of siting deadlines, imposed increased disposal 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.[378] 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, but upheld the remainder of the statute.[379] 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, which has resulted in most nuclear waste being stored where it is produced, raising local environmental and public health concerns as well as national security concerns.[380]

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.

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374. 42 U.S.C. §§ 2021b–2021d (2006); *see* Ostrow, *supra* note 356, at 314 (explaining that the LLW Act required states to dispose of waste and authorized states to enter into interstate compacts to do so).

375. § 2021e(e)(1)(B)(i).

376. *See* Ostrow, *supra* note 356, at 314, 316 (explaining the development of the Act as a response to the problems with only three states having LLW facilities, and noting that states favored passage of the Act).

377. *Id.* at 314–15.

378. § 2021e(d)-(e); New York v. United States, 505 U.S. 144, 152–54 (1994); Ostrow, *supra* note 356, at 314–15.

379. *New York*, 505 U.S. at 145.

380. *See* Ostrow, *supra* note 356, at 316–17 ("[T]he Act's state-based approach to a national siting problem failed to achieve its ultimate goal of ensuring the safe, nationwide disposal of LLW as states, plagued by local opposition, refused to meet their voluntarily assumed compact obligations.").

Nevertheless, the difficulty that 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 of the interstate compact framework in the 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 process also provide eminent domain authority to the regional agency. This could potentially be a very strong solution, as it would allow for concurrent planning and siting authority at the level where transmission-facility management occurs, similar to what happens within Texas. It also would more cleanly address the "public need" for a line, as the public would be broadly defined to include an interstate market rather than an intrastate market.

B. Cost-Allocation Concerns

The question of cost allocation underlies virtually all debates surrounding regulatory authority for siting interstate transmission lines. Cost allocation, as former FERC Commissioner Joe Kelliher noted, is "almost a uniquely American issue."[381] While the United Kingdom has only one grid, and one owner,[382] the United States has "eight or ten grids, eight or ten large regional machines that have scores or hundreds of owners."[383] This creates problems with power flow when any single component of the grid expands, as well as difficulties with cost allocation and pricing.[384] In the United Kingdom

381. *Former FERC Commissioner Kelliher Discusses New Transmission, Cost Allocation Rule*, E&E PUB., LLC (July 25, 2011), http://www.eenews.net/tv/transcript/1378. For a discussion of postage stamp pricing, see *supra* note 285.

382. *See* Scott Butler, UK Electricity Networks: The Nature of UK Electricity Transmission and Distribution Networks in an Intermittent Renewable and Embedded Electricity Generation Future, at 32 (September 2001) (MSc Thesis, Imperial College of Science Technology and Medicine), *available at* http://www.parliament.uk/documents/post/e5.pdf (highlighting that National Grid is statutorily charged with maintaining UK's high-voltage electricity grid).

383. *Former FERC Commissioner Kelliher Discusses New Transmission, Cost Allocation Rule*, *supra* note 381.

384. *Id.*

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.[385]

In the United States, the biggest challenge of allocating transmission costs arises in an interstate context. Although FERC has issued orders requiring OATTs 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."[386] 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.[387] Sometimes costs may be spread across a RTO, but benefits might be conferred upon neighboring regions which do not have to pay.[388] 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.[389] Others, such as PJM, have tried to argue that the benefits from reliability warrant sharing costs 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. The most promising development has been 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

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385. *See* MARCELINO MADRIGAL & STEVEN STOFT, ENERGY AND MINING SECTOR BOARD DISCUSSION PAPER NO. 26, TRANSMISSION EXPANSION FOR RENEWABLE ENERGY SCALE-UP EMERGING LESSONS AND RECOMMENDATIONS 17–20, 105–07 (2011), *available at* http://www.esmap.org/esmap/sites/esmap.org/files/DP%2026%20transmission%20expansion%20text%209-15-11web_SMALL.pdf.

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

387. *See supra* Part II.C.1 (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).

388. *See supra* Part II.C.1 (discussing MISO's inability to allocate transmission costs to its neighboring RTO, PJM, despite potential transmission benefits accruing to PJM).

389. *See supra* Part II.C (discussing the regions that have taken this particular approach).

achievement of various state and regional policy goals and mandates such as RPSs. 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, there is evidence of recent progress. The seventeen "no regrets" transmission lines in the MISO region are beginning construction. Not only did FERC approve the MISO MVP pricing, it endorsed similar cost-allocation principles on a nationwide basis in Order 1000.[390] As it stands, all indicators are that MVP pricing may be the best plan to date to facilitate equitable transmission line buildout and to meet renewable energy needs.[391]

It should be noted, however, that the new MVP pricing and Order 1000 face potential legal challenges, particularly the argument that their allocations of costs are not commensurate with the benefits various market participants receive. Drawing upon the Seventh Circuit's opinion in *Illinois Commerce Commission v. FERC*,[392] 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."[393] The MISO MVP project developed and conducted a detailed cost-benefit analysis to evaluate the state-level benefits of the new proposed lines.

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390. 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*, *supra* note 381.

391. Another potential model is the Southwest Power Pool's ("SPP") "highway/byway" approach to cost allocation that allows members to share the 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 kV and above are allocated 100% 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 FERC Approves SPP Highway/Byway Cost Allocation Plan for High Voltage Transmission Lines*, CLIMATE + ENERGY PROJECT BLOG (June 17, 2010), http://blog.climateandenergy.org/2010/06/17/ferc-approves-spp-highway-byway-cost-allocation-plan/ (describing the new plan).

392. 576 F.3d 470 (7th Cir. 2009).

393. *Id.* at 477; *see also* Evan Reese & Doug Smith, *FERC Affirms MISO and SPP Approaches to Transmission Cost Allocation*, VANNESS FELDMAN (October 24, 2011), http://www.vnf.com/news-alerts-643.html (describing the holding from the case and its potential implications for FERC).

As Professor Jim Rossi has argued, the current state-by-state siting approval process raises its own cost-allocation challenges.[394] When transmission siting is done on a state-by-state basis and many state statutes direct state PUCs to consider the "need" for the line based on benefits to in-state customers only, it becomes extremely difficult politically, if not outright illegal, to site a line to export state power to nearby population centers.[395] 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.[396] Moreover, as Professor Rossi and Ashley Brown, Executive Director of the Harvard Electricity Policy Group, 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 continue to resist approval of transmission lines designed primarily to provide power to out-of-state customers.[397]

This state-by-state approach also affects the selection of the size of the transmission line, the architecture of the grid, and ultimately the ability to develop large-scale renewable energy. While larger, 765 kV, high-voltage transmission lines are more costly to build, they use less land because they are able to carry four times the electricity of 345 kV lines.[398] Gaining approval for infrastructure that 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 developing new

394. *See* Rossi, supra note 17, 1018–23 (describing problems with the "status quo of state transmission siting laws").

395. *See id.* at 1019–26 (describing state siting laws as concerned with the "interests within individual states")*; see also* Pierce, Jr., *supra* note 147, at 179–83 (discussing the 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).

396. *See* Rossi, *supra* note 17, at 1022–26.

397. *See* Brown & Rossi, supra note 147, at 726–28 (noting that "the practice states have historically used in allocating the costs of transmission has had a profound impact on siting lines throughout the United States").

398. 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 765 kV line is able to carry four times more electricity. TJ Smith, Midwest ISO, Presentation to Energy and Environmental Policy Course, University of Minnesota (Nov. 22, 2011).

approaches to cost allocation, starting with and, likely, going beyond the efforts described in this Article.

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, implementing them requires policy development and implementation on the state, regional, and federal levels. Some states are rich in renewable resources and far exceed their population-based electricity demand, while others are poor in such resources and have significant population-based electricity demand. Some states have developed more integrated and favorable policies for renewable energy and transmission line development, while 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 lines, and FERC itself has not always used the tools it has to address the problem. As a result, significant policy changes may be unlikely until the country or a region of the country is faced with a large-scale transmission crisis.

This Article addresses the regional- and state-level challenges of planning, siting, and paying for large-scale transmission lines to support renewable energy development. If and how these decisions are made will affect the future of renewable energy development and shape the ability of grid operators to integrate these renewable resources into the electricity system. This Article highlights current state and regional efforts to create greater interstate transmission capacity for renewable power. It shows that they may serve as models for the increased collaboration required to create that capacity and realize the attendant benefits. These developments illustrate how states are attempting to serve as "laboratories of democracy" in the realm of interstate transmission; to achieve success, however, they must do so cooperatively rather than independently.