ANTICOMPETITIVE TRANSMISSION DEVELOPMENT AND THE RISKS FOR DECARBONIZATION

BY

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For more than twenty years, the Federal Energy Regulation Commission (FERC) has sought to increase open access to electricity transmission infrastructure owned by incumbent monopolistic utilities. While these efforts have produced some benefits, incumbent transmission line owners continue to exercise market power that allows them to deter and delay streamlined open transmission access. In an effort to minimize the incumbents' anticompetitive force, FERC passed a law eliminating a federal right of first refusal (ROFR), which had given incumbents preferential rights to build and profit from new regional transmission infrastructure. States responded to FERC's actions by creating their own state ROFR, which will allow incumbent utilities to expand the scope of their monopolies. Frustrated by FERC's acquiescence to the new state laws, an independent transmission developer has challenged a Minnesota ROFR on Dormant Commerce Clause grounds. The resolution of the lawsuit could have profound impacts on the transition to a decarbonized, multi-scalar, competitive energy system.

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I. INTRODUCTION

The U.S. electricity sector is undergoing a profound transformation. In 2019, for the first time, power generation from renewable resources surpassed the amount of electricity produced from coal[1]—a remarkable feat, considering coal had comprised nearly fifty percent of U.S. electricity generation only a decade earlier[2]—and 2019 economic analyses showed that most renewables had become cost-competitive with, if not significantly cheaper than, coal, nuclear, and natural gas.[3] Technological innovations in batteries, storage, metering, and grid operations have opened the electricity system to new participants and spurred a re-envisioning of the electricity grid of the future.[4] More and

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[1] Chris Martin, *For First Time, Renewables Surpass Coal in U.S. Power Mix*, BLOOMBERG (June 25, 2019), https://perma.cc/M4NL-2Q4C.

[2] *Renewables Cheaper than 75 Percent of U.S. Coal, Report Finds*, YALEENVIRONMENT360 (Mar. 25, 2019), https://perma.cc/4TEP-3C5Y; ERIC GIMON ET AL., THE COAL COST CROSSOVER: ECONOMIC VIABILITY OF EXISTING COAL COMPARED TO NEW LOCAL WIND AND SOLAR RESOURCES 2 (2019), https://perma.cc/LE6A-DTNL.

[3] INT'L RENEWABLE ENERGY AGENCY, RENEWABLE POWER GENERATION COSTS IN 2018 9 (2019), https://perma.cc/RJM3-VF6Y; Joe Romm, *Renewables are Winning the Economics Battle Against New Coal and Gas, Stunning Study Shows*, THINKPROGRESS (June 18, 2019), https://perma.cc/S4UE-SGCD.

[4] *See* David Schmitt & Glenn M. Sanford, *Energy Storage: Can We Get It Right?*, 39 ENERGY L.J. 447, 448 (2018); Shelley Welton, *Clean Electrification*, 88 U. COLO. L. REV.

more, experts have begun to envision an electricity system that is highly dynamic, multi-scalar, and powered primarily by renewable resources.[5] Realizing this vision will enable the United States to decarbonize the broader energy system, as studies show that a dynamic zero-carbon electricity system can power the transportation and heating sectors.[6] The energy system of the future will thus integrate rooftop solar, distributed storage, smart meters, electric vehicles, heat pumps, interactive appliances, and a host of other new assets of various sizes.[7] The future energy system will also embrace new market designs, so that demand response, energy efficiency, storage, and other grid services are compensated equivalently to power production, and so that various producers, consumers, and "prosumers" can become market players.[8] Even as these changes take place, however, the United States will continue to depend upon large facilities—including wind farms, utility-scale solar, and hydroelectric plants—delivering electricity along high-voltage transmission lines.[9]

For nearly a century, economic theory and regulatory policy treated electricity as a natural monopoly incapable of sustaining competition.[10] Over time, however, generation and retail electricity services became increasingly competitive, and legal structures changed to promote

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571, 579–80 (2017) [hereinafter Welton, *Clean Electrification*]; Shelley Welton, *Non-Transmission Alternatives*, 39 HARV. ENVTL. L. REV. 457, 460 (2015) [hereinafter Welton, *Non-Transmission Alternatives*].

[5] Welton, *Clean Electrification, supra* note 4, at 574–75, 578, 597; Welton, *Non-Transmission Alternatives*, *supra* note 4, at 458–59.

[6] *See* Keith Dennis et al., *Environmentally Beneficial Electrification: The Dawn of Emissions Efficiency*, 29 ELECTRICITY J., July 2016, at 52; David Roberts, *The Key to Tackling Climate Change: Electrify Everything*, VOX (Oct. 27, 2017), https://perma.cc/CEH9-GAY5; Nick Eyre et al., *Reaching a 1.5°C Target: Socio-Technical Challenges for a Rapid Transition to Low-Carbon Electricity Systems*, 376 PHIL. TRANSACTIONS ROYAL SOC'Y: MATHEMATICAL PHYSICAL & ENG'G SCI. 2119 (2018).

[7] *See* Dennis et al., *supra* note 6, at 54.

[8] Welton, *Non-Transmission Alternatives, supra* note 4, at 460; Sharon B. Jacobs, *The Energy Prosumer*, 43 ECOLOGY L.Q. 519, 520–21 (2016); Joseph P. Tomain, *The Democratization of Energy*, 48 VAND. J. TRANSNAT'L L. 1125, 1127, 1137 (2015); Rich Glick & Matthew Christiansen, *FERC and Climate Change*, 40 ENERGY L.J. 1, 13 (2019).

[9] Alexandra B. Klass, *Expanding the U.S. Electric Transmission and Distribution Grid to Meet Deep Decarbonization Goals*, 47 Envtl. L. Rep. (Envtl. Law Inst.) 10,749, 10,751–53 (2017) [hereinafter Klass, *Expanding U.S. Transmission for Deep Decarbonization*]; JAMES H. WILLIAMS ET AL., U.S. 2050 REPORT: PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES 46–47 (2014); JUDY W. CHANG & JOHANNES P. PFEIFENBERGER, BRATTLE GROUP, WELL-PLANNED ELECTRIC TRANSMISSION SAVES CUSTOMER COSTS: IMPROVED TRANSMISSION PLANNING IS KEY TO THE TRANSITION TO A CARBON-CONSTRAINED FUTURE 6–9, 17, 21 (2016); TRIEU MAI ET AL., NAT'L RENEWABLE ENERGY LAB., RENEWABLE ELECTRICITY FUTURES STUDY: EXECUTIVE SUMMARY 25–26 (2012). *See generally* MICHAEL MILLIGAN ET AL., NAT'L RENEWABLE ENERGY LAB., RENEWABLE ELECTRICITY FUTURES STUDY: BULK ELECTRIC POWER SYSTEMS: OPERATIONS AND TRANSMISSION PLANNING (2012).

[10] William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1639 (2014).

diverse ownership and competitive energy markets.[11] And yet, conventional wisdom treated the "wires" components of the electricity system as inherently monopolistic.[12] Regulators thus focused their efforts on ensuring open access to transmission lines owned by incumbent monopolists.[13] Yet, despite these efforts, discrimination and inefficient transmission access persist, threatening the swift transition to renewables.[14] And, while market conditions have changed so that competitive transmission development has become economically viable, unnatural monopolies and states protecting them have undermined the development of essential and independent transmission infrastructure.[15]

In part to address these concerns, in 2011, the Federal Energy Regulatory Commission (FERC) issued Order No. 1000,[16] a potentially game-changing rule aimed at improving regional electricity transmission planning and furthering FERC's longstanding mission to make the U.S. electricity system more competitive.[17] Order No. 1000 included three main requirements. First, it required transmission line owners and operators to engage in regional and interregional planning to ensure that transmission lines are developed and operated to effectuate state and federal policy goals, including the transition from fossil fuels to renewable resources.[18] Second, Order No. 1000 mandated changes to cost allocation practices so the costs of new transmission lines would be shared among all beneficiaries and not assigned to new

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[11] *Id.* at 1661–63.

[12] *Id.* at 1700. This was because transmission lines were very expensive to build, few market participants would have access to the capital necessary to build them, and the marginal revenues for transmission services would make it difficult for competitors to recover their costs.

[13] *See* FERC Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,540, 21,541–43 (May 10, 1996) (summarizing final rules designed to require open access non-discriminatory transmission service in order to promote competitive wholesale power markets) [hereinafter Order No. 888]; *see also* Transmission Access Policy Study Grp. v. Fed. Energy Regulatory Comm'n, 225 F.3d 667, 738 (D.C. Cir. 2000), *aff'd sub nom.* New York v. Fed. Energy Regulatory Comm'n, 535 U.S. 1 (2002).

[14] *See infra* notes 176–203 and accompanying text (discussing interconnection challenges for large generators).

[15] Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10,750 (discussing the increase in independent transmission developers); Meredith Hurley, *Traditional Public Utility Law and the Demise of a Merchant Transmission Developer*, 14 NW. J.L. & SOC. POL'Y 318, 319, 334–38, 346 (2019).

[16] FERC Order No. 1000, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 76 Fed. Reg. 49,842 (2011) [hereinafter Order No. 1000]; *see also* Joel B. Eisen, *FERC's Expansive Authority to Transform the Electric Grid*, 49 U.C. DAVIS L. REV. 1783, 1827–28 (2016).

[17] Order No. 1000: Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 136 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,051, 7–8 (2011), https://perma.cc/5RKG-EF7Q.

[18] Order No. 1000, 76 Fed. Reg. at 49,845, 49,867, 49,876–77, 49,907; S.C. Pub. Serv. Auth. v. Fed. Energy Regulatory Comm'n, 762 F.3d 41, 51–52 (D.C. Cir. 2014) (explaining the focus on renewable resources).

generators (particularly renewable facilities) or others in a discriminatory manner.[19] Third, Order No. 1000 revoked the federal "right of first refusal" (ROFR), a policy that had given incumbent utilities preferential rights to build and profit from new regional and interregional transmission infrastructure.[20] FERC justified the revocation of the ROFR on the basis that it created unjust and unreasonable tariffs and rates by excluding non-incumbent transmission line owners, who were increasingly able to compete on price and service with the incumbents, from effective participation in the planning and development process.[21] As a whole, Order No. 1000 reflected FERC's belief that transmission and distribution—components of the electricity system that were long considered to be natural monopolies—should be subject to at least some of the same competitive forces as other parts of the electricity system.

Reaction to Order No. 1000 was swift and negative by those who have long eschewed competition in the electricity system.[22] Utilities and regulators in "traditionally regulated states"—those states that have yet to unbundle their electricity systems and expose incumbents to competition—challenged Order No. 1000 on the grounds that it intruded too far into traditional state regulatory authority.[23] Although they lost this direct challenge,[24] they successfully lobbied state lawmakers to enact new state ROFR, which may negate the impacts of FERC's elimination of the federal ROFR.[25] FERC acquiesced to these state laws,[26] exhibiting a longstanding reticence to assert its full statutory authority over the transmission system,[27] and courts have upheld FERC's submission. While the D.C. and Seventh Circuits upheld Order No. 1000 as a permissible exercise of federal authority,[28] courts also approved the retention of existing and creation of new state ROFR.[29] The resulting state ROFR have produced regulatory loopholes that incumbent utilities and pro-incumbent legislators and regulators have

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19 Order No. 1000, 76 Fed. Reg. at 49,929–32, 49,949–50.

20 *Id.* at 49,895–96.

21 *Id.* at 49,881–86.

22 *See S.C. Pub. Serv. Auth.*, 762 F.3d at 48.

23 *Id.* at 62.

24 *Id.*

25 LSP Transmission Holdings, L.L.C. v. Lange, 329 F. Supp. 3d 695, 702 n.5 (D. Minn. 2018) (explaining how Minnesota passed a state ROFR law in response to FERC's revocation of the federal ROFR).

26 *See* MISO Transmission Owners v. Fed. Energy Regulatory Comm'n, 819 F.3d 329, 336 (7th Cir. 2016).

27 *See* New York v. Fed. Energy Regulatory Comm'n, 535 U.S. 1, 28 (2002) (upholding FERC's refusal to assert jurisdiction over all transmission in interstate commerce after concluding FERC has authority to regulate all electricity transmission under the Federal Power Act).

28 *S.C. Pub. Serv. Auth.*, 762 F.3d at 48; *MISO Transmission Owners*, 819 F.3d at 336.

29 *MISO Transmission Owners*, 819 F.3d at 336; *see* Okla. Gas & Elec. Co. v. Fed. Energy Regulatory Comm'n, 827 F.3d 75, 79–80 n.2 (D.C. Cir. 2016).

maximized,[30] at the expense of a cleaner, more dynamic, well-regulated energy system.[31]

In response, non-incumbent transmission developers have looked beyond the Federal Power Act and FERC's inconsistent transmission rules to secure the right to build new infrastructure. In *LSP Transmission Holdings, L.L.C. v. Lange*,[32] (*LSP*), a non-incumbent transmission developer invoked the Dormant Commerce Clause to open the doors to competitive transmission development.[33] LSP alleged that a newly established Minnesota ROFR, which the state legislature passed to negate the impacts of Order No. 1000's abolishment of the federal ROFR, discriminated against developers that did not have an existing footprint in the state.[34] Although the district court rejected this argument, the case is on appeal,[35] and two developments make the appeal particularly interesting. First, the U.S. Department of Justice's Antitrust Division participated in the case on behalf of the developer,[36] raising the prospect that another federal agency could help advance competitive transmission development even if FERC does not. Second, the case tests the extent of a 2019 Supreme Court decision reaffirming that the Dormant Commerce Clause prohibits state laws that limit market participation to in-state residents.[37] LSP argues the Minnesota ROFR should be struck down because it preferences in-state residents,[38] but Minnesota disputes the law is discriminatory. Minnesota also contends, even if the law is held to be discriminatory, states are allowed to give preference to incumbent in-state utilities under the so-called "public utilities exception" to the Dormant Commerce Clause.[39] The outcome of the *LSP* appeal will indicate whether the Dormant Commerce Clause will serve as an instrument promoting or barrier preventing competitive transmission development.

A ruling against LSP may embolden other states to develop their own strict ROFR,impeding regional transmission planning that is necessary for renewable energy development. On the other hand, if the Eighth Circuit rules in favor of LSP, this could both limit the creation of new ROFR and compel FERC to develop clearer standards for and oversight over competitive transmission development and transmission access. FERC may even welcome this outcome, as FERC's regulations

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30 *See* Hurley, *supra* note 15, at 328.

31 *See* discussion *infra* Part V.

32 329 F. Supp. 3d 695, 703 (D. Minn. 2018).

33 *Id.*

34 *Id.*

35 *Id.* at 710–11.

36 *Id.* at 703–04 (describing and declining to consider the Antitrust Division's untimely "Statement of Interest").

37 Tenn. Wine & Spirits Retailers Ass'n v. Thomas, 139 S. Ct. 2449, 2459, 2476 (2019).

38 *LSP*, 329 F. Supp. 3d at 696, 700 (supplemental briefing at https://perma.cc/ZH5Z-FQF7).

39 *See* Camps Newfound/Owatonna, Inc. v. Town of Harrison, 520 U.S. 564, 607 (1997) (Scalia, J. dissenting) (describing Gen. Motors Corp. v. Tracy, 519 U.S. 278, 307 (1997)).

indicate the agency is committed to open access, streamlined interconnection of independent generators, integration of new technology, and a transition to competitive and decarbonized energy markets.[40] But in practice, FERC frequently succumbs to pushback by incumbent utilities and states[41] or strategically avoids addressing thorny legal questions regarding transmission when it can decide disputes on other grounds.[42] If the Eighth Circuit in *LSP* sets aside Minnesota's ROFR and the protections it provides in-state incumbent utilities, FERC may be compelled to establish more thorough regulations and engage in deeper oversight over the transmission system.

More broadly, *LSP* could affect energy decarbonization efforts throughout the country. While competitive transmission development is a relatively new issue facing the courts, incumbency in the electricity sector is not.[43] Today, incumbency threatens more than market access and competition; it threatens to delay the integration of storage, distributed energy, and renewable resources that may be deployed more quickly and at lower cost by independent energy market players.[44] FERC has been unable, and at times unwilling, to force energy markets and infrastructure open to non-incumbent actors.[45] This reticence could delay, if not derail, the swift transition to a dynamic, multi-scalar, decarbonized energy system.[46] Regulatory inconsistency and avoidance strategies also impede streamlined transmission access and a well-ordered transition to a more cohesive or organized transmission system.[47] While the Dormant Commerce Clause is a suboptimal tool to ensure open, well-regulated access, it could serve as a useful instrument for securing competition and non-incumbent development. FERC, in turn, would be incentivized to develop a better regulatory strategy to ensure open and effective decarbonization.

Part II of this Article lays the groundwork by describing the importance of a dynamic and competitive electricity system to energy

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[40] *See* Glick & Christiansen, *supra* note 8, at 21–22 (describing many of FERC's regulations).

[41] *See MISO Transmission Owners*, 819 F.3d 329, 336 (7th Cir. 2016) (noting that FERC acquiesced to state ROFR provisions "to avoid intrusion on the traditional role of the States"); *New York*, 535 U.S. 1, 26 (2002) (noting FERC chose to not regulate all transmission in interstate commerce because it did not want to extend the open access remedy to bundled retail transmissions, and regulating these transmissions would be jurisdictionally difficult).

[42] PáTu Wind Farm v. Portland Gen. Elec., 150 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,032, at 1–2 (2015) (declining to address directly the legal dispute about a transmission owner's responsibility to offer variable transmission services).

[43] *The World's 10 Longest Running Energy Utility Companies,* POWER-TECH. (Apr. 18, 2015), https://perma.cc/ET4N-YQME.

[44] *See infra* Part V.

[45] *See infra* Part IV.

[46] *See infra* Part V.

[47] *See* Boyd, *supra* note 10, at 1614 (explaining the importance of effective public utility regulation as the electricity system becomes more competitive).

decarbonization. Part III then discusses FERC's efforts to increase competition in the electricity system, by encouraging independent power production and ensuring open access. This Part first discusses the basic elements of, and rationales for, treating and regulating the electricity system as a natural monopoly. It then explores FERC's efforts to open the system to competition; after briefly discussing the ongoing lurch towards competitive electricity generation, Part III explores in greater depth FERC's decades-long project to integrate competition into the otherwise monopolistic transmission system, through open access transmission tariffs, grid interconnection orders, and Order No. 1000's regional planning requirements and abolition of the federal ROFR. As Part III shows, inconsistent regulatory practices from FERC and certain incumbent-friendly decisions from the courts have weakened the agency's efforts and allowed states to erect new barriers to competition in the transmission sector, including state ROFR. Part IV then evaluates, by assessing the claims in *LSP*, whether the Dormant Commerce Clause could serve as a tool to ensure the transmission system becomes more competitive. Without attempting to predict the outcome of the case, this Part critiques the district court's analysis and argues that states should not be entitled to erect new ROFR that undermine competitive transmission development. Part V then describes the risks of the *LSP* litigation, explaining how it could pave the way for states to erect even more barriers to a competitive decarbonized energy system. Finally, Part VI concludes that while the Dormant Commerce Clause is a crude tool for competitive transmission, it could spur FERC to provide clearer regulatory guidance that will promote competition and provide some degree of certainty even as the energy system undergoes a profound transformation.

II. THE TRANSITION TO A DYNAMIC AND DECARBONIZED ENERGY SYSTEM

For the world to have any chance of preventing runaway climate change and keeping human-caused temperature increases to no more than 1.5 degrees Celsius (°C), societies must commit to rapid and deep decarbonization that will transform global and domestic energy systems. A 2018 report from the Intergovernmental Panel on Climate Change noted that energy decarbonization is a critical component of meeting the 1.5°C target,[48] and many scientists have concluded that eliminating fossil fuels from energy (electricity, heat, and transportation) systems around the globe is necessary for climate change mitigation.[49] Decarbonizing the energy system will require the replacement fossil

[48] *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, GLOBAL WARMING OF 1.5 DEGREES, SUMMARY FOR POLICYMAKERS 19–21 (2018), https://perma.cc/XM3U-LA7X.

[49] *See* Eyre et al., *supra* note 6, at 2.

fuels, which currently provide eighty percent of all energy, with zero-carbon energy sources.[50]

Energy system experts, engineers, climate scientists, and economists have developed multiple energy decarbonization models.[51] Although the models may have different targets—some aim for "low-carbon" energy, while others focus on complete decarbonization—and timeframes, they all converge on a few essential requirements for energy decarbonization.[52] Specifically, the models show that a decarbonized energy system will require nearly complete electrification of the power, thermal, and transportation sectors; rapid replacement of fossil fuel-fired power plants with renewable (and possibly nuclear) electricity; substantial reductions in overall energy use through efficiency and conservation; and expansion of multi-scalar electricity grids that allow for both distributed energy resources and expanded regional electricity systems to function.[53] Achieving these outcomes will require accelerated development of new technologies of varying sizes and types for electricity production, storage, metering, and movement. To ensure the electricity system operates reliably, efficiently, and affordably, and to avoid unnecessary habitat loss or environmental damage, the electricity system must become more dynamic and enlist the participation of many more actors.

A. Zero-Carbon Energy

Most models show that a decarbonized electricity system will serve as the backbone of the post-carbon energy system.[54] This decarbonized system will be powered primarily by renewable resources of varying capacities, configured so that renewable facilities can serve as backup power supplies for other renewable sources.[55] In some locations nuclear power might play a role, but political opposition and high costs will limit its deployment.[56] While some models suggest that fossil fuels will need

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[50] *See* INT'L ENERGY AGENCY, GLOBAL ENERGY & CO_2 STATUS REPORT 2017, at 2 (2018), https://perma.cc/Q9JY-RQW3.

[51] *See* Eyre et al., *supra* note 6, at 4; WILLIAMS ET AL., *supra* note 9, at 6, 9–10; Mark Z. Jacobson et al., *100% Clean and Renewable Wind, Water, and Sunlight (WWS) All-Sector Energy Roadmaps for the 50 United States*, 8 ENERGY & ENVTL. SCI. 2093 (2015).

[52] *See* Jacobson et al., *supra* note 51, at 2094; GREGORY BRINKMAN ET AL., NAT'L RENEWABLE ENERGY LAB., LOW CARBON GRID STUDY: ANALYSIS OF A 50% REDUCTION IN CALIFORNIA v (2016), https://perma.cc/A4WY-26NW.

[53] *See* Eyre et al., *supra* note 6, at 2; WILLIAMS ET AL., *supra* note 9, at x; Jacobson et al., *supra* note 51, at 2094–95; MIT ENERGY INITIATIVE, THE FUTURE OF NUCLEAR ENERGY IN A CARBON-CONSTRAINED WORLD: AN INTERDISCIPLINARY MIT STUDY xi (2018), https://perma.cc/YW7M-WX7K.

[54] *See* Eyre et al., *supra* note 6, at 2; Dennis et al., *supra* note 6, at 52; Roberts, *supra* note 6.

[55] *See* Jeffrey Y. Tsao et al., *The Electrification of Energy: Long-Term Trends and Opportunities*, 5 MRS ENERGY & SUSTAINABILITY 1, 2, 4, 7–9 (2018), available at https://perma.cc/WCS7-KRGA.

[56] *See* MIT ENERGY INITIATIVE, *supra* note 53, at xi–xii.

to supply at least a small amount of backup electricity supplies, other models predict that storage devices—including batteries, flywheels, compressed air systems, and pumped hydropower—will provide backup power and grid reliability.[57]

For the outcomes in the models to be achieved, the United States must quickly ramp up renewable energy development while taking existing fossil fuel sources offline, well before they have reached the ends of their economic and operational useful lives.[58] Renewable resources will need to be developed and sited strategically, so that power production meets diurnal and seasonal demand, and so that renewable facilities can provide back-up power for each other, at least until storage technologies become abundant, affordable, and capable of storing massive amounts of energy.[59] Similarly, the deployment of storage technology must be both strategic and efficient.[60] Finally, the rapid transition from fossil-fueled power supplies to zero-carbon resources must also account for the likely increase in electricity demand (also called load) that will result from electrification of the transportation and heating/cooling systems.[61]

Every decarbonization model shows that transportation must be electrified for the world to meet its temperature targets.[62] While models differ as to whether long-distance heavy-duty trucks, cargo ships, and aircraft will run on electricity or other sources, such as biofuels or hydrogen, models agree that passenger vehicles, transit vehicles, and rail systems can and must be electrified.[63] Eliminating the use of diesel alone could result in quick reductions of black carbon emissions and, with other black carbon reduction strategies, prevent temperature increases of up to 0.5°C.[64] Eliminating the use of combustion engines in passenger and transit vehicles will have an even deeper impact on overall transportation emissions.

Vehicle electrification will produce better outcomes if it is accompanied by vehicle automation and shared mobility. Researchers at the University of California at Davis have recommended that three "revolutions" in urban transportation—electrification, automation, and

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57 *See* Tsao et al., *supra* note 55, at 7–9.

58 *See* ANNIE BENN ET AL., ROCKY MOUNTAIN INST., MANAGING THE COAL CAPITAL TRANSITION (2018), https://perma.cc/923G-PWDC.

59 *See* JIM LAZAR, REGULATORY ASSISTANCE PROJECT, TEACHING THE "DUCK" TO FLY 34 (2nd ed. 2016), https://perma.cc/6ZHP-ZYKB; Tsao et al., *supra* note 55, at 9–11.

60 *See* Tsao et al., *supra* note 55, at 8–9.

61 *See* Eyre et al., *supra* note 6, at 6.

62 *See* Tsao et al., *supra* note 55, at 2–3; Roberts, *supra* note 6.

63 Lewis M. Fulton et al., *The Need for Biofuels as Part of a Low Carbon Energy Future*, 9 BIOFPR 476, 476 (2015); *see* Roberts, *supra* note 6; *see* David McCollum et al., *Transport Electrification: A Key Element for Energy System Transformation and Climate Stabilization*, 123 CLIMATIC CHANGE 651, 651–52, 656 (2014).

64 *See* Press Release, Int'l Geosphere-Biosphere Programme, Black Carbon Larger Cause of Climate Change Than Previously Assessed (Jan. 15, 2013), https://perma.cc/ALC5-4D7D.

shared mobility—become priorities for policymakers.[65] Pursuing these three strategies simultaneously will ensure that emissions reductions through vehicle electrification are not offset by increased use of automated single-passenger vehicles.[66] The three strategies together will also reduce congestion and prevent overdevelopment of "gray" vehicle infrastructure that diminishes urban green spaces and livability.[67] Achieving all three revolutions will require and result in profound changes to the energy systems; indeed, vehicle electrification on its own will transform both the transportation and electricity systems.[68]

Decarbonization models also show that thermal systems, which are often fueled by natural gas and oil, will need to be electrified as well.[69] Electrified cooling and heating can use a host of technologies, from in-situ heat pumps to district heating and cooling systems.[70] In some places, it is possible that biogas (methane produced from biological waste) could substitute for fossil methane.[71] Such replacements, however, would likely succeed only in a distributed system that is isolated from interstate and regional natural gas markets, because biogas supplies will be limited in a carbon-constrained world and most natural gas markets depend upon economies of scale to function.[72] Thus, a post-carbon energy system will replace the bulk of gas infrastructure with electrification.

Finally, energy efficiency and conservation must play an increased role in the post-carbon energy system. Indeed, the International Energy Agency calculated that energy efficiency could account for nearly fifty percent of global greenhouse gas emissions avoidance if governments were to quickly implement efficiency and conservation programs.[73] Efficiency programs focused on industry, buildings, and transportation

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65 LEW FULTON ET AL., THREE REVOLUTIONS IN URBAN TRANSPORTATION 1 (2017), https://perma.cc/Z4PF-ENZH.

66 *See id.* at 16–19.

67 *See id.* at 19–22.

68 *See id.* at 16.

69 *See* Tsao et al., *supra* note 55, at 2–3.

70 REN21, RENEWABLES 2018 GLOBAL STATUS REPORT 36 (2018).

71 Scarlett Evans, *The Pros and Cons of Biogas: Is it the Answer to a Circular Economy?,* POWER TECH. (Oct. 16, 2018), https://perma.cc/2T88-BQ3D.

72 *See id.*; Bethany McLean, *The Next Financial Crisis Lurks Underground,* NEW YORK TIMES (September 1, 2018), https://perma.cc/DBW5-7AFW; *see also* MARK DYSON ET AL., ROCKY MOUNTAIN INST., PROSPECTS FOR GAS PIPELINES IN THE ERA OF CLEAN ENERGY: HOW CLEAN ENERGY PORTFOLIOS ARE REDUCING U.S. POWER SECTOR DEMAND FOR NATURAL GAS AND CREATING STRANDED ASSET RISKS FOR GAS PIPELINES 40–41 (2019). https://perma.cc/K27E-NTCX (noting that as gas throughput falls, per-unit costs will increase).

73 *See* INT'L ENERGY AGENCY, MARKET REPORT SERIES: ENERGY EFFICIENCY 2017, at 20 (2017) (noting that the efficiency initiatives of IEA member states constituted approximately half of the global reduction in energy use and emissions in 2016).

would achieve quick emissions reductions.[74] They would also prevent uncontrolled load growth in the electricity sector as transportation and heating become electrified. Implementation of such efficiency programs would have a transformative effect on building design, housing systems, and urban environments.

B. Multi-Scalar, Dynamic Energy Systems

The existing electricity system was designed on the central power station model, through which electricity would move from large, centralized power plants over long-distance transmission lines, through distribution grids, to the end users.[75] The decarbonized energy system will need to become much more diverse, dynamic, and multi-scalar.[76] It will also need to enlist the participation of many more actors, so that consumers also become producers, and so that we move away from the century-old division of the electricity system into generation, transmission, and distribution. Achieving these changes will necessarily implicate the existing monopoly franchises of incumbent utility actors.

Distributed energy resources will play a much greater role in the post-carbon energy systems.[77] Distributed resources are energy resources located at or near the site of consumption.[78] They include rooftop solar arrays, on-site wind turbines, and small-scale hydropower systems; stationary and mobile batteries (including electric vehicle batteries); and demand-response resources that allow energy consumers to quickly reduce energy consumption in response to market or energy system needs. Distributed energy resources could serve several purposes in a decarbonized energy system. Distributed energy resources could allow rural areas and other regions with energy poverty to become electrified without investing in capital- and fossil fuel-intensive central power stations and transmission infrastructure.[79] Distributed energy systems that can be isolated from the bulk transmission system during power outages, storms, and other emergencies can provide backup

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74 *See* Sara C. Bronin, *Energy in the Ecopolis*, 45 Envtl. L. Rep. (Envtl. Law Inst.) 10,514, 10,517–18 (2015); *see also* Jo Hermans, *The Challenge of Energy-Efficient Transportation*, MRS ENERGY & SUSTAINABILITY 2 (2017).

75 *See Centralized Generation of Electricity and its Impacts on the Environment*, ENVTL. PROT. AGENCY, https://perma.cc/DD5U-YQVK (last visited Nov. 2, 2019).

76 *See* Eyre et al., *supra* note 6, at 3–4.

77 Bronin, *supra* note 74, at 10,515.

78 *See id.* at 10,520; *Glossary*, U.S. ENERGY INFO. ADMIN, https://perma.cc/4EJY-2VSP (last visited Nov. 2, 2019) (defining a distributed generator as, "[a] generator that is located close to the particular load that it is intended to serve. General, but nonexclusive, characteristics of these generators include: an operating strategy that supports the served load; and interconnection to a distribution or sub-transmission system (138 kV or less).").

79 *See* THOMAS HIRSCH ET AL., GUIDING PRINCIPLES & LESSONS LEARNT FOR A JUST ENERGY TRANSITION IN THE GLOBAL SOUTH 18–19 (2017); REN21, *supra* note 70, at 125–26.

power and resilient infrastructure.[80] Distributed energy systems may also accelerate decarbonization efforts, since the costs and risks associated with distributed energy resources are typically smaller than those associated with larger energy facilities.[81] According to some models, distributed energy resources could account for twenty-five percent of the future energy system.[82]

At the other end of the scale from distributed energy resources, studies suggest that expanded and more integrated regional energy grids will be essential for rapid decarbonization.[83] Regional networks enable generation resource diversification, which increases grid reliability. Regional networks may also be more economically efficient because they allow power sources that might otherwise be idle to deliver electricity into new load centers.[84]

The future decarbonized energy system will, in short, be utterly unlike today's energy system. The most profound changes will likely be felt in the transportation sector, which will no longer run on internal combustion engines and will instead be powered by electricity. Batteries and charging stations will displace gas tanks and filling stations, and autonomous vehicles will almost certainly replace human drivers. Thermal energy systems will also be radically transformed. Oil and gas infrastructure designed to deliver fuels to residential and commercial buildings will be abandoned as heat pumps replace furnaces. Over time, new buildings and appliances will be built to run only on electricity and existing ones will require retrofits or replacement. Finally, while the electricity system will be somewhat familiar, it will become more expansive due to regionalization and yet more localized due to distributed energy resources. These changes will create a host of new opportunities and social improvements. But it remains unclear who will benefit from these changes or whether our transmission system will be reconfigured to support the necessary changes. Indeed, as the next Part discusses, efforts to transition to a more dynamic, inclusive, and competitive energy system have been underway for decades, and yet incumbency remains a significant barrier to its realization.

III. THE LONG AND WINDING ROAD TOWARDS COMPETITIVE ENERGY

The U.S. electricity system was developed and regulated under the assumption that electricity service was a natural monopoly incapable of supporting competition.[85] However, in the wake of the nuclear energy boom-and-bust, when utilities around the country over-invested in

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[80] *See* Matthew Burke & Jennie Stephens, *Political Power and Renewable Energy Futures: A Critical Review,* 35 ENERGY RES. & SOC. SCI. 78, 84 (2018).

[81] *Id.*

[82] *Id.*

[83] *See id.* at 85.

[84] *See id.* at 84–85.

[85] Boyd, *supra* note 10, at 1638–39.

nuclear power plants and then passed most of the costs of their failed investments onto ratepayers, lawmakers began to envision and pass laws to support a new category of non-utility energy providers.[86] Congress thus passed the Public Utility Regulatory Policies Act[87] (PURPA) in 1978, requiring utilities to purchase power from independent "qualifying facilities" (QFs) and provide these facilities access to the transmission system.[88] The success of PURPA—which brought more than 1,200 QFs online during its first decade or so[89]—spurred interest in a broader movement to increase competition in electricity generation.[90] Congress therefore enacted measures to promote generation by other independent power producers in 1992,[91] leading FERC to develop measures to facilitate access to transmission lines that were owned and operated by incumbent utilities that had enjoyed monopoly power over their transmission system for decades.[92]

These efforts to increase competition have had mixed results, in part because traditional utility regulation serves to protect incumbent monopolies, as Part A briefly explains. Thus, while electricity generation has become more competitive, incumbency has impeded a transition to a truly competitive generation fleet. Incumbency is even more of a challenge when it comes to transmission and other grid services. Parts B and C describe the progress and setbacks associated with developing a more competitive and dynamic energy system.

A. Natural Monopoly Regulation

For nearly a century, economists and regulators considered the electricity system to be a natural monopoly.[93] A natural monopoly exists where high costs of entry, combined with low marginal prices, make competition unlikely.[94] The electricity system long had features of a natural monopoly: high capital costs associated with building new power plants, and transmission and distribution infrastructure that enabled large amounts of electricity to be delivered and sold at low, per-unit

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86 *See* John S. Moot, *Economic Theories of Regulation and Electricity Restructuring*, 25 ENERGY L.J. 273, 274 (2004).

87 Public Utilities Regulatory Policy Act of 1978, 16 U.S.C. §§ 2601–2645 (2012).

88 16 U.S.C. § 824a-3(a)–(b) (2012); Fed. Energy Regulatory Comm'n v. Mississippi, 456 U.S. 742, 751 (1982); Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp., 461 U.S. 402, 418–19 (1983) (upholding FERC's avoided cost and streamlined interconnection rules).

89 David B. Spence, *The Politics of Electricity Restructuring: Theory vs. Practice*, 40 WAKE FOREST L. REV. 417, 424 (2005) [hereinafter Spence, *Politics of Restructuring*].

90 *Id.*

91 *See id.*; Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (repealed 2005).

92 Order No. 888, 61 Fed. Reg. 21,540, 21,541 (1996).

93 RICHARD F. HIRSH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM 12–15 (1999).

94 *Id.* at 121.

prices.[95] As companies began to exercise monopolistic behaviors in the electricity sector, legislators responded by developing the "regulatory" compact that persists, to varying degrees, today.[96] Under this regulatory compact, utilities receive an exclusive monopoly franchise in exchange for, among other things, rate regulation.[97] Through rate regulation, regulators set the prices that utilities can charge for each kilowatt of electricity they deliver.[98]

While rate regulation was at one point considered protective of consumers (that is, in the public interest), it has characteristics that benefit the utilities instead (that is, it may be more of a public choice instrument).[99] Specifically, under the traditional rate regulation formula, utilities directly profit through a rate of return they earn on their capital investments.[100] The more the utilities invest in capital projects, such as transmission infrastructure, the higher their direct profits.[101] When regulators first established the rate regulation formula, this incentive made sense, as the country was in its early stages of growth and industrialization, and companies needed incentives to make risky, capital-intensive investments.[102] Over time, however, through a dynamic called the Averch-Johnson effect,[103] the ratemaking formula

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95 Joseph P. Tomain, *The Persistence of Natural Monopoly*, 16 NAT. RESOURCES & ENV'T 243 (2002).

96 *Id.* at 242–43.

97 Jersey Cent. Power & Light Co. v. Fed. Energy Regulatory Comm'n, 810 F.2d 1168, 1189 (1987) (Star, J., concurring).

98 JIM LAZAR, REGULATORY ASSISTANCE PROJECT, ELECTRICITY REGULATION IN THE U.S.: A GUIDE 68 (2nd ed. 2016), https://perma.cc/XCC3-8UAW.

99 *Id.* at 4, 7.

100 *See* CHRIS WOLD, DAVID HUNTER, & MELISSA POWERS, CLIMATE CHANGE AND THE LAW, 801 (2d ed. 2013).

> To calculate the revenue requirement, regulators use a common formula:
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> R = Br + O
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> Under this formula:
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> R = the "revenue requirement," or the amount of revenue the utility is entitled to earn during a specified time period;
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> B = the rate base, which includes the capital expenses the utility incurs to provide service to ratepayers;
>
> r = the rate of return; and
>
> O = operating expenses.
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> Pursuant to this formula, utilities presumptively earn their profits by investing in capital projects; they earn a profit (the rate of return) on the total amount invested in such projects (the rate base).

101 *Id.*

102 Robert L. Swartwout, *Current Utility Regulatory Practice from a Historical Perspective*, 32 NAT. RESOURCES J. 289, 306–07 (1992).

103 *See* Harvey Averch & Leland L. Johnson, *The Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052, 1065–66 (1962).

created undesirable incentives for the utilities to overbuild.[104] These incentives can be checked by effective procurement regulation or, when a true natural monopoly no longer exists, through competition and erosion of the natural monopoly.

B. Competitive Generation: Progress and Backlash

Many scholars attribute the rise of competitive electricity generation to PURPA.[105] The purchase mandate, attractive rates, and guaranteed interconnection spurred a quick rise in QF development,[106] signaling that electricity generation could involve many different producers, sources of energy, and sizes of facilities. The rise of QFs corresponded with the growing U.S. belief in free markets, the Reagan Administration's privatization and trust-busting efforts, and the eventual embrace of neoliberalism within the Democratic Party.[107] Thus, it made sense that Congress would adopt policies to promote competitive generation.

In 1992, Congress passed and George H.W. Bush signed the 1992 Energy Policy Act, which established a new category of independent power producers (IPPs) that were exempted from federal and state regulatory requirements that otherwise applied to vertically integrated monopolistic electric utilities.[108] Several states also passed laws requiring electric utilities to unbundle their electricity systems, so that electricity generation would become a business separate from transmission and distribution.[109] In some places, states required incumbent utilities to sell off their existing generation assets, while others allowed the utilities to create subsidiary businesses for power generation.[110] Both models were designed to open generation to competition by preventing incumbent utilities from discriminating against IPPs.[111] This competition, they believed, would both limit incumbents' market power and result in lower energy prices for consumers.[112]

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104 *Id.* at 1059.

105 *See, e.g.*, Spence, *Politics of Restructuring*, *supra* note 89; Jonas J. Monast, *Electricity Competition and the Public Good: Rethinking Markets and Monopolies*, 90 U. COLO. L. REV. 667, 676–77 (2019).

106 Spence, *Politics of Restructuring*, *supra* note 89, at 424.

107 *See* Boyd, *supra* note 10, at 1660–61.

108 Energy Policy Act of 1992, Pub. L. No. 102-486 § 32, § 711, 106 Stat. 2776 (repealed 2005).

109 *See* Monast, *supra* note 105, at 677; David B. Spence, *Can Law Manage Competitive Energy Markets?*, 93 CORNELL L. REV. 765, 773–74 (2008) [hereinafter Spence, *Competitive Energy Markets*].

110 Spence, *Competitive Energy Markets*, *supra* note 109, at 784–85; Monast, *supra* note 105, at 677–78.

111 *See* Spence, *Competitive Energy Markets*, *supra* note 109, at 779–80, 784–85.

112 *Id.*

Indeed, competition did seem to flourish, not only at the generation level but also at the retail level. Between 1996 and 2000, twenty-four states passed legislation allowing retail energy users—primarily larger industrial and commercial customers—to purchase electricity from an alternative supplier.[113] In some parts of the country, with FERC's urging, Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) formed, facilitating competitive and dynamic energy markets.[114] For a time, it may have seemed inevitable that the electricity system would be fully restructured as generation became more competitive. But the California electricity crisis in 2000–2001 derailed competitive momentum in many places.[115] The crisis was the result of several factors, including poor design of the state's restructured system; unfortunate weather conditions that created actual or perceived resource scarcity; unethical and illegal market manipulation by market participants; reticence by FERC to impose price caps or otherwise intervene in a clearly dysfunctional market; and a regulatory gap that prevented California from filling the regulatory void left by FERC.[116] Although scholars and regulators have since identified the California crisis as a "perfect storm" of conditions that good market design and regulation likely could have prevented,[117] it spooked lawmakers in other states.[118] Several states that were on the cusp of enacting their own restructuring rules suspended electricity restructuring.[119] As a result, only sixteen states have restructured their energy systems to promote meaningful competition.[120]

While restructuring fell out of favor in the early 2000s, other state and federal policies nonetheless continued to promote competitive generation. First, the combination of federal renewable tax credits and state renewable portfolio standards (RPSs) incentivized renewable IPPs to enter energy markets.[121] Until quite recently, incumbent utilities

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113 Moot, *supra* note 86, at 286.

114 *See* Boyd, *supra* note 10, at 1663; Monast, *supra* note 105, at 677–78.

115 Spence, *Competitive Energy Markets*, *supra* note 109, at 774–75 ("The California energy crisis of 2000–2001 cowed some states into halting their restructuring plans, though retail competition continued in sixteen states and the District of Columbia."); Moot, *supra* note 86, at 286.

116 *See* Timothy P. Duane, *Regulation's Rationale: Learning from the California Energy Crisis*, 19 YALE J. ON REG. 471, 497–99, 507, 511 (2002); Spence, *Competitive Energy Markets*, *supra* note 109, at 779–80.

117 *See* Michael A. Yuffee, *California's Electricity Crisis: How Best to Respond to the "Perfect Storm,"* 22 ENERGY L.J. 65, 66 (2001); Joel B. Eisen, *Demand Response's Three Generations: Market Pathways and Challenges in the Modern Electric Grid,* 18 N.C. J.L. & TECH. 351*,* 379–80 (2017) [hereinafter Eisen, *Demand Response*].

118 Moot, *supra* note 86, at 286; Spence, *Competitive Energy Markets*, *supra* note 109, at 774.

119 Moot, *supra* note 86, at 286; Spence, *Competitive Energy Markets*, *supra* note 109, at 774.

120 Moot, *supra* note 86, at 286; Spence, *Competitive Energy Markets*, *supra* note 109, at 774.

121 *See* Monast, *supra* note 105, at 706; *see also* Joel B. Eisen & Felix Mormann, *Free Trade in Electric Power*, 2018 UTAH L. REV. 49, 82, 86 (2018).

lacked the interest or technical expertise necessary to develop renewable generation facilities, which allowed renewable IPPs to flourish.[122] Second, as renewable IPPs gained experience and secured larger contracts, they were able to build and operate more and larger facilities at lower costs, bending the cost curve for renewables overall.[123] The lower costs then spurred a new boom in QF development under PURPA, which provided an avenue for smaller facilities to sell their power to incumbent utilities.[124] Although PURPA had been an available policy for decades, avoided cost rates had often been too low to support the nascent renewable energy industry.[125] However, as IPPs gained experience developing renewable projects—thanks to RPSs and subsidies—their costs dropped, making PURPA relevant to a new generation of QFs beginning in the late aughts.[126] Third, net-metering programs provided another critical avenue for independent generators, especially rooftop solar developers, to access energy markets.[127] Net metering provides these generators both interconnection and billing credits that can make small-scale renewable generation economically viable.[128] Thus, while many states abandoned their efforts to restructure the electricity system for the sake of promoting competitive markets, renewable energy policies nonetheless enabled competitive generation.

Not surprisingly, monopolistic incumbents responded to this next wave of competition by seeking to derail the renewable policies.[129] As legal scholars have explained in detail, bundled utilities have advocated for rollbacks of PURPA at the state and local level,[130] successfully challenged net metering laws in several jurisdictions,[131] and begun to

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122 Monast, *supra* note 105, at 680–82.

123 *Id.* at 684 (citing U.S. DEP'T OF ENERGY, STAFF REPORT TO THE SECRETARY ON ELECTRICITY MARKETS AND RELIABILITY 13 (2017)).

124 *Id.* at 698 (discussing PURPA dynamics in North Carolina).

125 *Id.* at 676–77.

126 *Id.* at 675–77.

127 *See* Elizabeth Graffy & Steven Kihm, *Does Disruptive Competition Mean a Death Spiral for Electric Utilities?*, 35 ENERGY L.J. 1, 5 (2014) (noting that growth in solar development was enabled by private leasing models, rather than utility deployment); *see also* Melissa Powers, *Small is (Still) Beautiful: Designing U.S. Energy Policies to Increase Localized Renewable Energy Generation*, 30 WIS. INT'L L.J. 595, 638 (2012) [hereinafter Powers, *Small is Beautiful*]; Inara Scott, *Incentive Regulation, New Business Models, and the Transformation of the Electric Power Industry*, 5 MICH. J. ENVTL. & ADMIN. L. 319, 354–55 (2016).

128 Powers, *Small is Beautiful*, *supra* note 127, at 636–37 n.263.

129 *See* Shelley Weston, *Grasping for Energy Democracy*, 116 MICH. L. REV. 581, 594–95 (2018); Lincoln L. Davies, *Eulogizing Renewable Energy Policy*, 33. J. LAND USE & ENVTL. L. 309, 323 (2018).

130 *See* Emily Hammond, *The Energy In-Betweens*, 59 JURIMETRICS J. 167, 189–90 (2019); Ari Peskoe, *Unjust, Unreasonable, and Unduly Discriminatory: Utility Rates and the Campaign Against Rooftop Solar*, 11 TEX. J. OIL GAS & ENERGY L. 211, 290–91, 295 (2016).

131 *See* Lincoln L. Davies & Sanya Carley, *Emerging Shadows in National Solar Policy? Nevada's Net Metering Transition in Context*, 30 ELECTRICITY J. 33, 33 (2017); Peskoe,

invest in their own renewable resources to meet RPS mandates as a means of eliminating competition from large IPPs.[132] As beneficiaries of federal tax credits, incumbent utilities have not directly challenged subsidies, but they have advocated for reforms in organized electricity markets that would make it more difficult for independent renewable energy producers to compete with incumbent-owned fossil fuel and nuclear facilities.[133] These efforts may be the last gasps of an industry that is losing its monopoly hold over generation, or they may pave the avenue through which the electricity system re-monopolizes while it decarbonizes.[134] As the next section explains, open access to the transmission system may well determine the outcome.

C. Open Transmission: A Slow Work in Progress

A lack of non-discriminatory and open access to the electricity system has been a barrier since well before efforts to restructure the electricity system came into vogue. For decades, laws included mechanisms to compel such access, but only on an ad hoc basis. For example, the Federal Power Act, passed in 1935, authorized the Federal Power Commission to order transmission owners to "wheel" other generators' electricity,[135] and the Supreme Court held in 1973 that antitrust law could serve as a tool for compelling uncooperative monopolies to grant transmission access.[136] The passage of PURPA, which directed electric utilities to interconnect QFs, inspired FERC to create its first set of streamlined, universal open-access regulations and to move away from ad hoc wheeling orders.[137] After the Supreme Court upheld FERC's regulations,[138] and with the passage of the 1992 Energy Policy Act,[139] FERC had the green light to create more capacious open-access regulations.

FERC responded to this authority by first adopting the most important open access regulation, Order No. 888, in 1996.[140] Order No. 888 directed transmission-owning utilities engaged in buying or selling

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supra note 130, at 294–95; Troy A. Rule, *Solar Energy, Utilities, and Fairness*, 6 SAN DIEGO J. CLIMATE & ENERGY L. 115, 135–38 (2014–2015).

132 *See* Davies & Carley, *supra* note 131, at 34.

133 *See* Monast, *supra* note 105, at 670.

134 *See* PETER KIND, EDISON ELEC. INST., DISRUPTIVE CHALLENGES: FINANCIAL IMPLICATIONS AND STRATEGIC RESPONSES TO A CHANGING RETAIL ELECTRIC BUSINESS 3–5 (2013), https://perma.cc/25HE-WKHY.

135 Spence, *Competitive Energy Markets, supra* note 109, at 768–69.

136 Otter Tail Power Co. v. United States, 410 U.S. 366, 372 (1973).

137 *Am. Paper Inst., Inc.*, 461 U.S. 402, 405 (1983) (upholding FERC's streamlined interconnection rules).

138 *Id.* at 423.

139 Energy Policy Act §§ 721–722, 16 U.S.C. § 824 (1994); *see also* Jim Rossi, *The Common Law "Duty to Serve" and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring,* 51 VAND. L. REV. 1233, 1279 (1998) (describing the movement towards Order No. 888).

140 Order No. 888, 61 Fed. Reg. 21,540, 21,540 (1996).

unbundled electricity to develop and use open-access transmission tariffs (OATTs) for all unbundled transmission service.[141] OATTs lay out the terms and rates for various types of transmission service the utilities can provide.[142] FERC expected the OATTs would limit discrimination,[143] but it also recognized the risks of self-dealing and discrimination would persist, so FERC encouraged utilities to join ISOs or RTOs. These third parties would manage the transmission system and minimize the ability of the transmission owners—who were also market participants—to do end-runs around the OATTs.[144] However, FERC did not order utilities to sell off their transmission holdings or mandate participation in an ISO or RTO; ownership structures and participation are matters for the states or utilities to decide[145]—particularly in the western United States, where FERC is prohibited from ordering incumbent utilities to convert historical firm transmission rights into marketable ones.[146] As a result, transmission access and management proceed along very different models throughout the country. In some states and regions, RTOs or ISOs play the dominant role in transmission management and access.[147] In other places without independent grid managers, incumbent utilities administer transmission access through a balkanized system involving OATTs and a set of subsequent rules FERC developed over the years.[148] Subparts 1 and 2 describe these developments, highlighting some of the key open access rules FERC has created.

Even with an expanding array of open-access rules, however, transmission access and planning remain inadequate. First, in areas without an ISO or RTO in place, and between different regions of the country, coordinated transmission planning is lacking.[149] Second, open-access rules have not fully mitigated concerns that incumbent transmission-owning utilities are discriminating against competitors

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141 *Id.* at 21,541.

142 *Id.* at 21,552, 21,666–67; FERC Order No. 2000, Regional Transmission Organizations, 65 Fed. Reg. 12,088, 12,099 (Jan. 9, 2000) [hereinafter Order No. 2000].

143 Monast, *supra* note 105, at 678–80 (discussing the roles of ISOs and RTOs).

144 *See* Order No. 888, 61 Fed. Reg. at 21,542 (1996); Order No. 2000, 65 Fed. Reg. at 12,091; *see also* Monast, *supra* note 105, at 850 (broadly defining "market participant").

145 *See* Moot, *supra* note 86, at 309.

146 Federal Power Act § 218, 16 U.S.C. § 824r (2012).

147 Monast, *supra* note 105, at 678; Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10,751; Alexandra B. Klass & Jim Rossi, *Revitalizing Dormant Commerce Clause Review for Interstate Coordination*, 100 MINN. L. REV. 129, 141–42 (2015).

148 *See* Klass & Rossi, *supra* note 147, at 147–48; Chris Westfall, *Western Regional Transmission Organization: Creating a Market to Support Renewable Energy*, 31 GEO. ENVTL. L. REV. 409, 415 (2019); *see also infra* notes 176–203 and accompanying text (describing Order Nos. 2003 and 845).

149 *See* Glick & Christiansen, *supra* note 8, at 37 (co-written by a FERC Commissioner and lamenting that Order No. 1000 has not resulted in the development of any interregional transmission facilities); *see also* Klass & Rossi, *supra* note 147, at 130–33.

seeking transmission access.[150] Third, because many incumbent utilities continue to earn a profit off of their capital investments, they are inclined to build gold-plated transmission systems, to the detriment of their ratepayers and competitors, and thereby perpetuate the development of a balkanized and discriminatory transmission system.[151] Fourth, open-access rules do not easily accommodate transmission alternatives and new technologies, including storage and demand response resources.[152] Collectively, these shortcomings are delaying decarbonization and raising the costs of the energy transition.[153]

To mitigate these risks, at least in part, FERC developed Order No. 890[154] to require regional planning, followed three years later by the more consequential Order No. 1000. Order No. 1000 directs utilities to engage in regional and interregional planning and eliminates the federal ROFR that gave incumbent utilities the first option to build new transmission infrastructure.[155] While courts upheld these aspects of Order No. 1000, they also affirmed that states could develop their own ROFR to prevent transmission development from becoming competitive. Subparts 3 and 4 discuss these developments.

1. Open-Access Transmission Tariffs and Independent Transmission Operators

FERC's initial significant foray into transmission access occurred through Order No. 888, which established FERC's jurisdictional reach and the rules governing transmission line access.[156] In Order No. 888, FERC asserted federal jurisdiction over transmission of wholesale[157] and unbundled retail electricity.[158] FERC then directed transmission owners to develop open access transmission tariffs that would clearly state the terms of transmission services.[159] Order No. 888 also directed transmission owners to take their own unbundled transmission services

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150 *See* Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10,751, 10,756 (discussing discriminatory siting laws).

151 *See infra* notes 197–208 and accompanying text.

152 Welton, *Non-Transmission Alternatives*, *supra* note 4, at 486–99.

153 *See* Klass & Rossi, *supra* note 147, at 147–48; Westfall, *supra* note 148, at 415.

154 FERC Order No. 890, Preventing Undue Discrimination and Preference in Transmission Service, 72 Fed. Reg. 12,266, 12,267–68 (Mar. 15, 2007).

155 Order No. 1000, 76 Fed. Reg. at 49,845–46 (2011).

156 Order No. 888, 61 Fed. Reg. 21,540, 21,541 (1996); *see also* Transmission Access Policy Study Grp. v. Fed. Energy Regulatory Comm'n, 225 F.3d 667, 683–98 (D.C. Cir. 2000), *aff'd sub nom.* New York v. Fed. Energy Regulatory Comm'n, 535 U.S. 1 (2002); Rossi, *supra* note 139, at 1280 (describing Order No. 888 as "the most significant event to date in electricity industry restructuring").

157 Wholesale electricity sales are sales of electricity for resale to another end user. Federal Power Act § 201(d), 16 U.S.C. § 824(d) (2012). Thus, whenever a utility buys electricity from an independent generator or another utility for resale to the buyer's customers, the utility is buying electricity at wholesale.

158 Retail sales involve sales of electricity to an end user. *See New York*, 535 U.S. 1, 56 (2002) (upholding FERC's assertion of jurisdiction over unbundled transmission).

159 Order No. 888, 61 Fed. Reg. at 21,551–52.

at the same terms and rates as they offer to others.[160] In theory, utilities subject to the same requirements as their competitors would be incentivized to develop and administer OATTs in a non-discriminatory manner. To facilitate this outcome, FERC released Order No. 889[161] simultaneously with Order No. 888. Order No. 889 established the rules for the Open Access Same-Time Information System (OASIS), a digital program designed to help ensure open access by providing participants in the electricity market real-time information regarding transmission capacity and other information related to transmission availability, congestion, and prices.[162]

Even with OASIS in place, FERC recognized that incumbent utilities would retain the incentive to discriminate against their competitors and favor their own generation. FERC therefore developed parameters for establishing ISOs to manage the transmission system and competitive wholesale markets.[163] Although FERC did not direct utilities to join ISOs or surrender their management powers over the transmission system to ISOs, Order No. 888 signaled FERC's belief that independent transmission and wholesale market management would facilitate open access.[164] To further this open access, FERC issued Order No. 2000[165] four years later, which promoted the creation of RTOs to expand the footprints of ISOs and created new governance principles for these entities.[166] These initial rules continue to guide open access to this day; Order Nos. 888 and 889 function as the backbones of FERC's competitive transmission structure, and ISOs and RTOs manage transmission systems and wholesale markets in about half of the country.[167]

These initial forays into promoting competitive transmission access, however, have not been sufficient to ensure truly open or streamlined grid access. In most places in the country, lawmakers have eschewed comprehensive electricity restructuring and pursued less ambitious, if

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160 *Id.* at 21,552.

161 FERC Order No. 889, Open Access Same-Time Information System and Standards of Conduct, 61 Fed. Reg. 21,737 (May 10, 1996), *order on reh'g,* Order No. 889-A, 62 Fed. Reg. 12,484 (1997) [*hereinafter* Order No. 889].

162 *Id.* at 21,738.

163 Order No. 888, 61 Fed. Reg. at 21,666–67.

164 *Id.*

165 Order No. 2000, 65 Fed. Reg. at 12,088 (2000).

166 *Id.*

167 Rossi, *supra* note 139, at 1280 (describing Order No. 888 as "the most significant event to date in electricity industry restructuring"); Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10,751, 10,756. However, Klass notes that even if open access and transmission planning orders were faithfully implemented, this would not necessarily eliminate substantial burdens to regional transmission development because states retain transmission line siting authority. *Id.* at 10,756 ("all the regional planning in the world cannot overcome state siting procedures that focus narrowly on in-state need."). As explained below, the *LSP* decision could make siting barriers even more onerous if federal courts were to adopt a categorical interpretation of the "public utilities exception." *See infra* notes 321–324 and accompanying text.

any, reforms.[168] While some states require their utilities to use competitive bidding when the utilities need to obtain new generation capacity, and while some states have allowed limited wholesale and retail choice for certain customers,[169] incumbent utilities are still allowed to continue generating electricity for their own wholesale and retail customers.[170] This gives the utilities an incentive to discriminate against their competitors, regardless of what the OATTs may say. To reduce the potential for discrimination, FERC therefore responded with interconnection orders aimed at increasing transparency and limiting utilities' discretion when administering OATTs.[171] FERC also developed and continues to develop new regulatory tools to open the transmission system to innovative technologies.

2. Interconnection Orders

While FERC has issued a number of interconnection and integration orders since it released Order No. 888,[172] rules affecting large generators, namely Order Nos. 2003[173] and 845,[174] are aimed at providing access to generators that are most likely to benefit from planning and development of regional transmission lines. The orders aim to further FERC's goal of opening the electricity system to more participants and minimizing the monopolistic powers of incumbent transmission owners.[175] And yet, despite these efforts, monopoly and incumbency remain significant barriers to new market participants and technologies.

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168 *See* Monast, *supra* note 105, at 669–70.

169 Spence, *Competitive Energy Markets*, *supra* note 109, at 774–75; Moot, *supra* note 86, at 286.

170 *See* Monast, *supra* note 105, at 669–70.

171 *See* FERC Order No. 2006, Standardization of Small Generator Interconnection Agreements and Procedures, FERC Stats. & Regs. ¶ 31,180, *order on reh'g*, Order No. 2006-A, FERC Stats. & Regs. ¶ 31,196 (2005), *order on clarification*, Order No. 2006-B, FERC Stats. & Regs. ¶ 31,221 (2006) [hereinafter Order No. 2006] (creating standardized procedures for interconnecting small generators); FERC Order No. 764, Integration of Variable Energy Resources, 139 FERC Order No. Order 764 ¶ 61,246 (2012) (issued to address complaints raised by renewable resources that transmission agreements were creating unreasonable barriers to intermittent generators).

172 *See id.*; *see also* Glick & Christiansen, *supra* note 8, at 16–17 (describing other significant orders).

173 FERC Order No. 2003, Standardization of Generator Interconnection Agreements and Procedures, 68 Fed. Reg. 49,846 (Aug. 19, 2003) [hereinafter Order No. 2003].

174 FERC Order No. 845, Reform of Generator Interconnection Procedures and Agreements, 163 FERC Stats. & Regs. ¶ 61,043 (2018) [hereinafter Order No. 845].

175 *Id.*

a. Orders Designed to Improve Transmission Access for Large Generators: Order Nos. 2003 and 845

In Order No. 2003, FERC took steps to minimize transmission-owning utilities' discretion regarding interconnection requests by directing transmission owners and operators to revise their OATTs to include standardized interconnection procedures and agreements for generators over 20 MW (large generators).[176] FERC reasoned that these standardized rules and *pro forma* agreements would streamline interconnection and minimize the incumbents' ability to discriminate against large generators.[177] The rules that FERC created, however, were unwieldy, created new uncertainties, and failed to curb the exercise of monopoly power, particularly by utilities that are not part of an ISO or RTO.[178] Thus, fifteen years later, FERC issued Order No. 845,[179] which amends Order No. 2003 to give generators better access to information and streamline the interconnection process. Perhaps more importantly, Order No. 845 gives generators the right to build their own interconnection infrastructure and to make network upgrades, without first giving incumbent transmission owners the first right to build.[180] It thus creates a distinct revocation of incumbent utilities' ROFR.

i. Order No. 2003

Order No. 2003 required utilities to revise their OATTs to establish standard procedures and a standard interconnection agreement for facilities larger than 20 MW.[181] In concept, standardized procedures and agreements should have streamlined the interconnection process by creating a one-size-fits-all process for interconnection. However, Order No. 2003's interconnection procedures ended up injecting uncertainty into the interconnection process and increasing costs, without necessarily eliminating an incumbent utility's ability to discriminate against generators seeking connection.[182]

Under Order No. 2003, before FERC amended it through Order No. 845, a generator seeking interconnection (called the interconnection customer) would submit a valid interconnection request and pay a $10,000 deposit.[183] The transmission provider then assigned the interconnection customer a position in the interconnection queue and began a series of interconnection studies to assess the feasibility of

176 Order No. 2003, 68 Fed. Reg. at 49,847 (2003).
177 *Id.*
178 *See* Stephen M. Fisher, *Reforming Interconnection Queue Management Under FERC Order No. 2003*, 26 YALE J. ON REG. 117, 120 (2009).
179 Order No. 845, 84 Fed. Reg. at 8157.
180 *Id.*
181 Order No. 2003, 68 Fed. Reg. at 49,846; Fisher, *supra* note 178, at 120.
182 Fisher, *supra* note 178, at 130.
183 Order No. 2003, 68 Fed. Reg. at 49,937.

interconnecting the generator.[184] The interconnection customer was required to pay for the studies, which would be performed after the customer deposited up to $100,000.[185] Assuming the studies were successfully completed, the transmission provider and interconnection customer would then negotiate terms related to construction of the interconnection lines.[186] The interconnection customer again bore the upfront costs of the construction and network upgrades performed by the transmission provider, although the transmission provider would reimburse the interconnection customer for the cost of some network upgrades.[187] However, if the interconnection customer was the "but for" cause of the network upgrades, the interconnection customer would bear the full costs of those upgrades.[188] Either way, under Order No. 2003, interconnection customers typically had to wait for the transmission provider to perform the network upgrades.

Order No. 2003 had three major flaws that impeded streamlined transmission access. First, the queue system teed up a host of problems.[189] Under Order No. 2003, interconnection customers could withdraw their requests for interconnection with relative ease.[190] Although this increased flexibility, it also undermined the goals of creating a streamlined process for interconnection. In particular, by allowing an interconnection customer to withdraw its application at any time, Order No. 2003 exposed generators who were further down the queue to delay and potential price shocks.[191] The delay was a result of the generator-specific studies transmission providers would conduct. For example, if generator 1 and generator 2 produced electricity from different resources (e.g., wind and solar), were located in different places and thus produced power under different conditions, or otherwise had distinguishing traits, the studies performed for generator 1 would not necessarily apply to generator 2. Thus, if generator 1 at the front of the queue withdrew its interconnection request after studies had been completed, generator 2 might have been required to commence the study processes anew. The price shocks were a predicable result of having the interconnection customers pay upfront for the interconnection and upgrades—if generator 1 stepped out of the queue because it could not

184 *Id.* at 49,939–41. The transmission provider performed three interconnection studies—a feasibility study, a system impact study, and a facilities study—to assess the technical capacity of integrating the generator.

185 *Id.* at 49,941, 49,944.

186 *Id.* at 49,942.

187 *Id.* at 49,964.

188 Pioneer Trail Wind Farm, L.L.C. v. Fed. Energy Regulatory Comm'n, 798 F.3d 603, 612–13 (7th Cir. 2015).

189 Fisher, *supra* note 178, at 130.

190 *Id.* at 127–28.

191 *Id.* at 132.

afford the high interconnection and network upgrade costs, generator 2 could then become financially accountable for network upgrade costs.[192]

Second, and somewhat incongruously to the withdrawal problem, Order No. 2003 limited the ability of generators to make changes to their projects prior to interconnection.[193] Under Order No. 2003, transmission owners could reject generators' requests to make "material" changes to their projects, but the order did not clearly define "material."[194] Nonetheless, if a generator sought a "material" change, it would often be sent to the back of the queue or face significant delays.[195]

Order No. 2003's third major shortcoming involved the role of incumbent transmission providers: under Order No. 2003, interconnection customers had to wait for transmission providers to conduct the transmission studies, provide cost estimates, negotiate specific terms related to construction, and build the transmission infrastructure.[196] While Order No. 2003 granted interconnection customers the right to build their own lines and make network upgrades in limited circumstances—such as when the transmission provider expressly stated it would not be able to build the infrastructure by the date the generator planned to come online—this limited right to build was inadequate.[197] Transmission providers could still slow-roll the studies and other aspects of the interconnection process.[198] Thus, by allowing transmission providers to play this gatekeeping role, particularly in non-restructured states where utilities operate as vertically integrated monopolies, Order No. 2003 failed to address the fundamentally anti-competitive nature of monopolies.

ii. Order No. 845

Order No. 845, issued in April 2019, aims to remedy some of the problems associated with Order No. 2003.[199] In issuing Order No. 845, FERC acknowledged that transmission interconnection is subject to significant delay and the queue process of Order No. 2003 is flawed.[200] Through Order No. 845, FERC hoped to increase the efficiency of transmission access and to make transmission information more transparent. First, in recognition of many generators' complaints that

192 *Id.*; *see also* W. Deptford Energy, L.L.C. v. Fed. Energy Regulatory Comm'n, 766 F.3d 10, 25 (D.C. Cir. 2014) (allowing a generator to avoid paying the costs of network upgrades because the PJM RTO had adjusted its tariff before the generator signed its interconnection agreement).

193 Fisher, *supra* note 178 at 132.

194 *Id.*

195 *Id.*

196 Order No. 2003, 68 Fed. Reg. at 49,861 (2003).

197 *Id.* at 49,851–52

198 *Id.*

199 Order No. 845, 84 Fed. Reg. at 8156 (2019).

200 *Id.* at 8163.

transmission providers were failing to adequately disclose information about transmission capacity, congestion, and other dynamics that would affect interconnection timing and costs, Order No. 845 requires transmission owners to provide more information through OASIS regarding transmission capacity and congestion.[201] Second, Order No. 845 requires transmission owners to adopt new procedures for accommodating project changes and to specify the types of changes that can be incorporated at various phases of the interconnection process without being deemed "material."[202] By narrowing the significant discretion the transmission owners had under Order No. 2003, Order No. 845 may streamline and accelerate transmission interconnection.

Finally, and perhaps most significantly, Order No. 845 gives interconnection customers the right to build interconnection facilities and stand-alone network upgrades without waiting for the transmission owners to determine if they can meet the generators' timeline.[203] Order No. 845 thus reverses the presumption that transmission owners are entitled to make the upgrades and build the interconnection facilities. It thus continues the process FERC initiated in Order No. 1000, discussed next, to remove the federal right of first refusal that gave incumbents the first crack at building new infrastructure.

3. Transmission Planning and the Right of First Refusal Under Order No. 1000

Order No. 1000 was arguably FERC's most ambitious transmission rule since Order No. 888 mandated OATTs. Order No. 1000 directed all transmission-owning and -operating public utilities to engage in regional and interregional planning processes, to account for state and federal policies in the regional planning processes, and to fairly allocate the costs of new transmission infrastructure among all beneficiaries.[204] In addition, and perhaps most controversially, Order No. 1000 revoked a longstanding federal ROFR that gave incumbent utilities the first crack at building, and profiting from the development of, regional transmission lines.[205]

The planning aspects of Order No. 1000 aimed to facilitate the development of a more coherent and coordinated transmission system that can accommodate anticipated changes in the electricity sector, including the expansion of renewable resources.[206] Order No. 1000 required transmission providers to develop regional and interregional plans to meet transmission needs driven by state and federal laws,

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201 *Id.* at 8170

202 *Id.* at 8180.

203 *Id.* at 8751.

204 FERC, Order No. 1000: Final Rule on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 136 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,051, at 10–11 (July 21, 2011), https://perma.cc/7MJY-4XS3.

205 *Id.* at 12.

206 *Id.* at 24–27.

including RPSs and other programs supporting renewable energy.[207] Order No. 1000 could thus prove to be especially important for the renewable energy industry.[208] Order No. 1000 also required transmission providers to look beyond their jurisdictional borders and to plan for a transmission system that will serve broader goals beyond each incumbents' economic interests.[209] This was also reflected in Order No. 1000's cost allocation rules, which required regional plans to include a method or methods for allocating the costs of new regional transmission facilities among all of the beneficiaries;[210] this was a departure from past cost allocation rules, which typically charged the costs of new transmission lines to the transmission customer. Order No. 1000 thus aimed to create more collaboration and broader planning approaches than transmission providers—particularly those outside of RTOs and ISOs—might otherwise pursue.

At the same time Order No. 1000 expected regional coordination and collaboration, it also embraced competition. Specifically, if a regional planning process revealed a need for new transmission lines, Order No. 1000 eliminated the federal ROFR, which previously allowed incumbent utilities to have the first right to build new transmission lines.[211] Incumbent utilities and, often, their state regulators, have found this erosion of monopoly power particularly troubling. As described next, they have therefore responded to the elimination of the federal ROFR by creating state ROFR laws. Courts, meanwhile, have often been unwilling to push back against these resurgent monopoly protections.

4. The Right-of-First Refusal in the Courts

For years, federal law gave incumbent utilities a ROFR to build new regional transmission lines.[212] Under this right, utilities with existing transmission infrastructure that was likely to interconnect to new transmission lines would have the first opportunity to build the lines.[213] If an incumbent exercised the right, it would be entitled to earn a rate of return on the costs of building the lines.[214] The federal ROFR thus created two incentives that were detrimental to smart regional transmission planning. First, it encouraged incumbents to propose new transmission lines in places they were likely to have a ROFR, rather than in places where new transmission infrastructure was necessary.[215] Second, it discouraged non-incumbents from participating in

207 Order No. 1000, 76 Fed. Reg. at 49,872 (2011).
208 *Id.* at 49,848.
209 *Id.* at 49,902.
210 *Id.* at 49,922.
211 *Id.* at 49,883.
212 *Id.*
213 *Id.* at 49,882.
214 *Id.*
215 *Id.*

transmission planning, since they were unlikely to benefit from the planning process.[216] To remove these bad incentives, FERC eliminated the federal ROFR through Order No. 1000.[217]

Although courts have upheld FERC's elimination of the federal ROFR for incumbent utilities, they have also opened doors for states to develop new state ROFR. Unless courts place limits on state ROFR, FERC's efforts to promote competitive transmission development will be at risk.

The D.C. Circuit first addressed FERC's abolition of the federal ROFR in a facial challenge to Order No. 1000.[218] In *South Carolina Public Service Authority v. FERC*, the D.C. Circuit upheld Order No. 1000 as a reasonable exercise of FERC's authority under the Federal Power Act (FPA).[219] Under FPA Section 205, FERC must ensure that rates, charges, facilities, and services are just and reasonable, and do not result in undue prejudice or disadvantage.[220] If FERC finds that rates and services violate Section 205, FERC must take action under Section 206 to ensure that the rates and services, as well as rules or regulations, are not "unjust, unreasonable, unduly discriminatory or preferential."[221] In Order No. 1000, FERC concluded that the federal ROFR resulted in unjust and unreasonable rates, because it deterred non-incumbents from proposing new transmission lines. In FERC's view, since non-incumbents would not be entitled to build the new infrastructure, they would have no incentive to invest the time and money in identifying transmission needs.[222] This dynamic would deter investment in cost-effective transmission lines and lead to unjust rates for consumers.[223]

Opponents of Order No. 1000 challenged FERC's authority to address the ROFR at all, as well as the underlying basis for FERC's revocation of the federal ROFR.[224] The D.C. Circuit rejected both challenges.[225] First, the court held that FERC reasonably explained how the existing ROFR affected consumer rates and thus acted within its legal authority under Section 206.[226] Second, the court held that FERC had met its burden to produce substantial evidence to support the relationship between the ROFR and rates.[227] Petitioners also asserted that non-incumbent transmission development would compromise

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216 *Id.*
217 Order No. 1000, 76 Fed. Reg. at 49,846 (2011).
218 *S.C. Pub. Serv. Auth.*, 762 F.3d 41, 81 (D.C. Cir. 2014).
219 *Id.* at 81.
220 16 U.S.C. § 824d(a)–(b) (2012).
221 *Id.* § 824e(a).
222 *S.C. Pub. Serv. Auth.*, 762 F.3d at 72.
223 *Id.*
224 *Id.* at 74, 76.
225 *Id.* at 76–78.
226 *Id.* at 74–76.
227 *Id.* at 76–77.

reliability,[228] but the D.C. Circuit concluded that FERC had placed sufficient guardrails around the non-incumbent development rights to ensure reliability.[229]

The D.C. Circuit declined to evaluate, however whether Order No. 1000 would violate the *Mobile-Sierra* presumption, "which presumes that freely-negotiated wholesale-energy contracts are just and reasonable unless found to seriously harm the public interest."[230] The petitioners argued that the removal of the ROFR would necessarily result in an abrogation of existing contracts under existing OATTs, but the court concluded such challenges should be adjudicated on an as-applied basis.[231] In the years since, courts have adjudicated several as-applied challenges raising *Mobile-Sierra* arguments. In *Oklahoma Gas & Electric Co. v. FERC*,[232] the D.C. Circuit upheld the Southwest Power Pool's elimination of the federal ROFR from its RTO member agreements, noting that the *Mobile-Sierra* presumption does not extend to "terms arrived at by horizontal competitors with a common interest to exclude any future competition"[233]—in other words, the court rejected incumbent utilities' claim that they could organize a cartel designed to prevent non-incumbents from developing and earning revenue from new transmission infrastructure. The Seventh Circuit likewise approved the elimination of the federal ROFR from the MISO member agreements.[234]

Although the courts upheld FERC's elimination of the federal ROFR, they simultaneously upheld exceptions under Order No. 1000 that were construed to protect ROFR created under state and local law.[235] The legality of state ROFR then emerged as a new litigation front. When FERC promulgated Order No. 1000, it included a savings clause: "Nothing in this requirement affects state or local laws or regulations regarding the construction of transmission facilities, including but not limited to authority over siting or permitting of transmission facilities."[236] On its face, the savings clause does not reference state rights of first refusal. But when utilities, states, and sometimes the RTOs sought to preserve incumbent utilities' ROFR as a matter of state law, FERC acquiesced. This led states to create wholly new rights of first refusal. Even though these could undermine FERC's efforts to facilitate competitive transmission development, FERC has thus far tolerated these newly created state protections for incumbent

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228 *Id.* at 79–81.

229 *Id.*

230 *Id.* at 81 (citing NRG Power Mktg., L.L.C. v. Me. Pub. Utils. Comm'n, 558 U.S. 165, 167 (2010)).

231 *Id.*

232 827 F.3d 75 (D.C. Cir. 2016).

233 *Id.* at 80.

234 *MISO Transmission Owners*, 819 F.3d 329, 333–35 (7th Cir. 2016).

235 *Id.* at 329; *LSP*, 329 F. Supp. 3d 695 (D. Minn. 2018).

236 *Order No. 1000: Transmission Planning and Cost Allocation*, FERC, https://perma.cc/2FCT-6YX2 (last updated Aug. 22, 2019).

utilities,[237] and courts have deferred to FERC's acquiescence.[238] Non-incumbent transmission developers therefore turned to a different legal theory to press for the right to build new transmission infrastructure: the Dormant Commerce Clause.

IV. THE DORMANT COMMERCE CLAUSE AND COMPETITIVE TRANSMISSION DEVELOPMENT

The mixed signals coming from FERC and the courts created a pathway for states to retain existing and develop new ROFR for incumbent utilities. Minnesota seized upon this opportunity in response to Order No. 1000 and the elimination of the federal ROFR from the transmission tariff administered by the Midcontinent Independent System Operator (MISO) RTO, [239] which covers fifteen states in the Midwest and central parts of the United States and the Canadian province, Manitoba.[240] The newly created Minnesota ROFR gave incumbent transmission owners the right to construct, own, and maintain any new transmission line approved through MISO's planning system.[241] Minnesota's ROFR defined "incumbent transmission owner" to include "any public utility that owns, operates, and maintains an electric transmission line *in this state*."[242] This in-state requirement triggered a lawsuit by LSP Transmission Holdings, an energy company with offices in New York, New Jersey, Missouri, and California, but no instate presence within Minnesota.[243] The lawsuit, while unsuccessful at the district court, triggered an appeal that could have broader implications for non-incumbent transmission developers, Dormant Commerce Clause jurisprudence, and the role of federal agencies beyond FERC in increasing competition in the electricity system. This section will explain the *LSP* litigation and its broader implications on the law and the changing energy system. First, though, it will explain the basic elements of the Dormant Commerce Clause and the limited, yet unclear, exception the Supreme Court created for regulated utilities.

A. The Dormant Commerce Clause and the "Public Utility" Exception

Described as the "negative" doctrine[244] accompanying the U.S. Constitution's Commerce Clause,[245] the Dormant Commerce Clause

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237 *MISO Transmission Owners*, 819 F.3d at 336–37.
238 *Id.* at 335.
239 *LSP*, 329 F. Supp. 3d at 701.
240 *About Miso*, MISO, https://perma.cc/SMF7-8TEX (last visited Nov. 2, 2019).
241 *LSP*, 329 F. Supp. 3d at 701; MINN. STAT. § 216B.246 (2012).
242 MINN. STAT. § 216B.246 (2012) (emphasis added).
243 *LSP*, 329 F. Supp. 3d at 703.
244 Gen. Motors Corp. v. Tracy, 519 U.S. 278, 287 (1997).
245 U.S. CONST. art. I, § 8 ("The Congress shall have Power . . . [t]o regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.").

aims to prevent state and local governments from discriminating against, or unduly interfering with, interstate commerce.[246] Some courts have also concluded the Dormant Commerce Clause also separately prohibits state laws that regulate extraterritorially.[247] Finally, a separate handful of cases suggest there is a "public utility" exception to the Dormant Commerce Clause, but the contours of this exception are unclear.[248]

1. The Dormant Commerce Clause Tests

The overarching purpose of the Dormant Commerce Clause is to prohibit states from discriminating against interstate commerce for economic protectionist reasons.[249] Such laws are subject to strict scrutiny review through which a court will assess whether a law is discriminatory in purpose or effect.[250] A court must invalidate a discriminatory law unless there is no other non-discriminatory means to achieve the law's legitimate purposes.[251] Very few laws that are found to be discriminatory have survived strict scrutiny review.[252] Most often, discriminatory laws falter in much the same way Tennessee's liquor licensing system did in the Supreme Court's most recent Dormant Commerce Clause decision from 2019.[253] The Tennessee law required anyone operating a liquor store to obtain a liquor license and imposed residency requirements on anyone seeking a license.[254] Under these requirements, only individuals and businesses that had resided in the state for at least two years were eligible to apply for new licenses.[255] The

246 *Tracy*, 519 U.S. at 287; Granholm v. Heald, 544 U.S. 460, 472 (2005).

247 *See* North Dakota v. Heydinger, 825 F.3d 912, 922 (8th Cir. 2016) (invalidating a Minnesota statute prohibiting importing power from outside the state if it would contribute to carbon-dioxide emissions as a per se Commerce Clause violation); *see also* Baldwin v. G.A.F. Seelig, Inc., 294 U.S. 511, 527 (1935) (invalidating a New York statute prohibiting the import of milk); Brown-Forman Distillers v. N.Y. State Liquor Auth., 476 U.S. 573, 582 (1986) (invalidating a New York statute setting in-state liquor prices at the lowest out-of-state price); Healy v. Beer Inst., 491 U.S. 324, 337 (1989) (invalidating a Connecticut statute requiring out-of-state beer importers to set prices at lowest price of neighboring states).

248 *Tracy*, 519 U.S. at 290 n.8.

249 Associated Indus. of Mo. v. Lohman, 511 U.S. 641, 647 (1994).

250 Or. Waste Sys. Inc. v. Dep't of Envtl. Quality of the State of Or., 511 U.S. 93, 101 (1993).

251 *Id.* at 100–01.

252 One notable exception is *Maine v. Taylor*, 477 U.S. 131, 151 (1986), in which the Supreme Court upheld a state ban on importing certain types of fish bait after the state demonstrated that a ban was the only viable means of preventing disease outbreaks caused by tainted bait.

253 Tenn. Wine & Spirits Retailers Ass'n v. Thomas, No. 18-96, slip op. at 2 (U.S. June 26, 2019).

254 *Id.* at 2–3.

255 *Id.* at 3. The two-year residency requirement was part of a larger package of licensing rules requiring individuals to have lived in state for at least 10 years to be eligible for license renewals and prohibiting corporations from obtaining licenses unless all of their stockholders are residents. *Id.* at 2–3.

Supreme Court invalidated the laws, finding the durational-residency requirement "plainly favors Tennesseans over nonresidents"[256] and was thus facially discriminatory against out-of-state parties and poorly tailored to meet any legitimate state goal.[257]

The Dormant Commerce Clause also nominally prohibits state and local laws that impose an "undue burden" on interstate commerce,[258] but this second prong of the doctrine is much less onerous. If a non-discriminatory law is challenged on Dormant Commerce Clause grounds, courts will engage in rational basis review to assess whether the burden the law poses on interstate commerce far outweighs the legitimate interests the law seeks to achieve.[259] The burden/benefit analysis affords the state great deference,[260] and laws that aim to protect public health, welfare, economic well-being, safety, and a host of other state interests are all considered to advance legitimate state interests.[261] Indeed, only a fraction of challenged laws have failed under the undue burden test.

An arguable third prong of the Dormant Commerce Clause prohibits states from engaging in extraterritorial regulation, although there is some dispute about whether this is indeed a separate test, rather than a specific application of the prohibition against discriminatory laws.[262] To the extent the Dormant Commerce Clause does indeed separately prohibit extraterritorial regulation, the prohibition applies most clearly to "price affirmation statutes," such as state laws that attempt to set the prices for wholesale liquor sales in other states.[263] Regulated parties have tried to extend the extraterritoriality prohibition to other types of law, with limited success. For example, the Ninth Circuit Court of Appeals has upheld state low-carbon fuel standards that measure a fuel's carbon footprint based on both in-state combustion and upstream (sometimes out-of-state) lifecycle emissions.[264] In contrast, the Eighth Circuit invalidated a Minnesota

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256 *Id.* at 10.

257 *Id.* at 32 (describing the package of durational-residency requirements as "plainly based on unalloyed protectionism").

258 Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).

259 *Id.* (a state law with only "incidental" effects on interstate commerce "will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.").

260 *Id.*

261 *Tracy*, 519 U.S. 278, 306 (1997).

262 *See* Energy & Envtl. Legal Inst. v. Epel, 793 F.3d 1169, 1172–74 (10th Cir. 2015). Justice Gorsuch, when he was a Tenth Circuit judge, expressed in this case his doubts that extraterritorial regulation is even a separate prohibition under the Dormant Commerce Clause.

263 *Id.*; *see also G.A.F. Seelig, Inc.*, 294 U.S. 511, 521–22. (1935); *Brown-Forman Distillers*, 476 U.S. 573, 580 (1986); *Healy*, 491 U.S. 324, 336 (1989).

264 Rocky Mountain Farmers Union v. Corey, 730 F.3d 1070, 1097, 1100, 1107 (9th Cir. 2013).

law that arguably prohibited the movement of coal-based electricity on transmission lines moving through Minnesota.[265]

2. The "Public Utilities Exception"

While these aspects of the Dormant Commerce Clause are well known, lesser-known caselaw has become increasingly important in the field of electricity regulation: the so-called "public utilities exception."[266] The exception arises from *General Motors Corp. v. Tracy*,[267] a 1997 case involving differential treatment of bundled and unbundled natural gas sales by the state of Ohio that survived a Dormant Commerce Clause challenge. While *Tracy* allows states to treat bundled and unbundled energy services differently, it does not countenance facially discriminatory treatment between similarly situated parties.[268]

General Motors had been a customer of a state-regulated, bundled natural gas utility until it switched gas providers and began purchasing gas from an unbundled provider.[269] Ohio law exempted bundled natural gas sales from taxes, but imposed taxes on unbundled natural gas sales.[270] General Motors argued the differential tax treatment amounted to discrimination—although the law did not reference state of origin—because all bundled gas utilities allegedly were in-state entities and all unbundled gas providers were allegedly out-of-state entities.[271]

The Court's decision in *Tracy* did not turn, however, on this in-state versus out-of-state distinction.[272] Indeed, the Court plainly rejected this argument, noting that "a hypothetical possibility of favoritism" has never constituted impermissible discrimination against the Dormant Commerce Clause.[273] Despite the lack of evidence of facial discrimination, the Court went on to explore whether a tax scheme imposed on only unbundled gas was unconstitutional.[274]

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265 *Heydinger*, 825 F.3d 912, 922 (8th Cir. 2016).

266 *See* Camps Newfound/Owatonna, Inc. v. Town of Harrison, Me., 520 U.S. 564, 607 (1997) (Scalia, J. dissenting).

267 *Tracy*, 519 U.S. 278, 306 (1997).

268 In *Tracy*, the Court treated the claim of facial discrimination separate and apart from General Motors' argument that the Ohio law treated in-state and out-of-state interests separately. *Id.* at 310–11 (discussing the facial discrimination argument after discussing the "public utilities exception"); *see also id.* at 307 n.15 ("Of course, if a State discriminates against out-of-state interests by drawing geographical distinctions between entities that are otherwise similarly situated, such facial discrimination will be subject to a high level of judicial scrutiny even if it is directed toward a legitimate health and safety goal."); Ky. Power Co. v. Huelsmann, 352 F. Supp. 2d 777, 786 (E.D. Ky. 2005) (noting that *Tracy* prohibits facial discrimination between two similarly situated entities).

269 *Tracy*, 519 U.S. at 282, 284–85.

270 *Id.* at 284–85.

271 *Id.* at 287–88.

272 *Id.* at 310–12.

273 *Id.* at 311 (quoting Associated Indus. of Mo. v. Lohman, 511 U.S. 641, 654 (1994)).

274 *Id.* at 297–98.

To set the analysis up, the Court explained, "any notion of discrimination assumes a comparison of substantially similar entities."[275] If bundled and unbundled gas providers served different markets, then it would not matter whether a state law had a discriminatory effect, because lifting any such discrimination "would not serve the Dormant Commerce Clause's fundamental objective of preserving a national market for competition undisturbed by preferential advantages conferred by a State upon its residents or resident competitors."[276] Thus, to assess the effects of discrimination, the Court first needed to understand the nature of the natural gas markets at issue.

On the one hand, the Court noted, it was easy to draw a distinction between the local markets served by bundled and unbundled gas providers. Bundled gas providers served captive customers in noncompetitive markets, and provided much more than gas sales; they developed, owned, and maintained the infrastructure to deliver natural gas, ensured there were sufficient backup supplies, managed low-income ratepayer programs, and otherwise served the public interest pursuant to a statutory duty to serve and traditional utility regulation.[277] In contrast, the unbundled gas providers simply sold gas to non-captive, large end-users in a competitive market and arranged for the gas's transportation.[278] Unbundled gas providers did not develop, own, or maintain infrastructure, administer low-income programs, or otherwise serve the public interest more broadly.[279] Thus, the Court noted, the bundled and unbundled gas providers offered different products and, when considered from the lens of captive customers—who had no option but to buy gas from the bundled gas providers—served distinct, non-competing markets.[280] From this perspective, eliminating discrimination would not serve the goals of the Dormant Commerce Clause to preserve a "national market for competition,"[281] because no such market existed.[282]

However, the bundled and unbundled gas providers *did* compete for customers in the non-captive market.[283] After all, General Motors had been a customer of a bundled gas utility before it chose to buy natural gas from an unbundled marketer. Discriminatory taxation schemes applied to this competitive market likely *would* interfere with goals of

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275 *Id.* at 298.
276 *Id.* at 299.
277 *Id.* at 293–97.
278 *Id.* at 284, 301–02.
279 *Id.* at 297.
280 *Id.* at 301–02.
281 *Id.* at 299.
282 *Id.* at 301–02.
283 *Id.* at 302–03.

creating a "national market for competition undisturbed by preferential advantages conferred by a State."[284]

Nonetheless, the Court explained, this distinction between the captive and non-captive markets was not clearly drawn, because the business model and regulatory obligations of the bundled utility were the same, regardless of which market the bundled utility served.[285] Moreover, the bundled utility's ability to provide continued service to its captive customer would be affected by the departure of non-captive customers.[286] In a traditional bundled utility setting, all customers receive the benefits of the utility's investments, infrastructure development, duty to serve, and regulated rates. In most cases, larger users pay higher rates, even though they may actually cost less to serve, and the higher rates help subsidize residential and lower-income customers.[287] This "cost-shifting" practice is common throughout the utility system.[288] When larger customers exit a bundled utility's service, the utility's overall revenues and ability to cross-subsidize decline.[289] Thus, so long as customers have the ability to leave an incumbent bundled utility's service, the lines between captive and non-captive markets will remain blurred.[290]

With these concerns in mind, the Supreme Court rejected General Motors' Dormant Commerce Clause argument on three grounds.[291] First, due to the potential impacts on the captive customers, the Court held that the noncompetitive, captive market should have controlling significance.[292] Second, because the Court lacked the expertise to predict the effects of invalidating the tax—specifically, how it would affect the captive market—it was wary to find a Dormant Commerce Clause violation.[293] Finally, to the extent the potential conflicts between the noncompetitive, captive market and the competitive market required resolution, it was up to Congress to offer solutions.[294]

In the decades since the Supreme Court issued *Tracy*, it has become known as a "public utilities" exception to the Dormant Commerce Clause.[295] But it is a narrower exception than some states and utilities may prefer to acknowledge. Most notably, *Tracy* does not sanction facially discriminatory laws affecting similarly situated parties, and it is

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284 *Id.* at 299. The Court did not rule that the taxation schemes were discriminatory, however. Rather, it raised the potential for discriminatory treatment as a hypothetical.

285 *Id.* at 302.

286 *Id.* at 307–08.

287 *See id.*; *see also* Jon Wellinghoff & James Tong, *A Common Confusion Over Net Metering is Undermining Utilities and the Grid: "Cost-shifting" and "Not Paying Your Fair Share" Are Not the Same Thing*, UTIL. DIVE (Jan. 22, 2015), https://perma.cc/3PRW-XGAQ.

288 *See* Wellinghoff & Tong, *supra* note 287.

289 *Id.*

290 *Tracy*, 519 U.S. at 305–07.

291 *Id.* at 304.

292 *Id.* at 304–07.

293 *Id.* at 304, 307–09.

294 *Id.* at 304, 309–10.

295 *See, e.g., Town of Harrison*, 520 U.S. 564, 607 (1997) (Scalia, J., dissenting).

unclear whether the Court believed the law had a discriminatory effect at all.[296] Although General Motors alleged the law was discriminatory due to its differential treatment between in-state and out-of-state entities,[297] the Court never explicitly stated that it would have found the differential tax treatment discriminatory but for the "public utility exception."[298] Indeed, the Court described the law as "supposedly discriminatory"[299] and dismissed the allegations of facial discrimination as unproven and hypothetical.[300] A footnote in the case also suggests the facts in *Tracy* gave rise, if anything, to an undue burden Dormant Commerce Clause challenge.[301]

More broadly, *Tracy* has come to stand for the commonsense notion that the Dormant Commerce Clause does not prohibit differential treatment of products that move in or entities that serve different markets.[302] *Tracy* does not sanction discrimination between in-state and out-of-state utilities that are similarly situated.[303] Despite this, as discussed next, the federal district court in *LSP* upheld an arguably facially discriminatory ROFR that seems to affect similarly situated parties under the "public utilities exception."[304] The resolution of that case could impact not only whether transmission development will become more competitive, but whether states will be allowed to develop other discriminatory and burdensome laws to roll back competitive energy markets in order to favor incumbent utilities.

B. LSP Transmission Holdings, L.L.C. v. Lange

In response to Order No. 1000's revocation of the federal ROFR, Minnesota created a state ROFR, which gives utilities that already have transmission lines built within Minnesota the ROFR to build new regional transmission infrastructure that will connect to those existing lines.[305] In 2017, two incumbent utilities exercised their ROFR to build a new forty-mile transmission line within Minnesota. Although the line is located entirely within one state,[306] it is one of several transmission lines that MISO—the RTO whose service territory includes Minnesota—

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296 *Tracy*, 519 U.S. at 310–11 (discussing the facial discrimination argument after discussing the "public utility" exception); *see also id.* at 307 n.15.

297 *Id.* at 287, 310.

298 *Id.* at 287–312.

299 *Id.* at 299.

300 *Id.* at 310–11.

301 *Id.* at 298 n.12.

302 *See*, *e.g.*, Allco Fin. Ltd. v. Klee, 861 F.3d 82, 93–108 (2d Cir. 2017) (upholding a Massachusetts RPS differentiating between renewable electricity that was likely to reach Massachusetts or reduce the state's reliance on fossil fuels and renewable electricity that was unlikely to provide any local benefits).

303 *Huelsmann*, 352 F. Supp. 2d 777, 786 (2005).

304 *LSP*, 329 F. Supp. 3d 695, 710 (D. Minn. 2018).

305 *Id.* at 701; MINN. STAT. § 216B.246 (2012).

306 *LSP*, 329 F. Supp. 3d at 703.

recommended be developed to improve regional and inter-regional transmission service.[307] Boxed out of the opportunity to build one of MISO's regional transmission lines due to the incumbents' exercise of the state ROFR,[308] LSP sued the state, arguing that the instate requirement violated the Dormant Commerce Clause by discriminating in favor of incumbent utilities with an existing footprint within the state of Minnesota and against utilities that lacked such presence.[309] LSP also alleged the state ROFR placed an undue burden on interstate commerce.[310] On a motion to dismiss, the district court rejected LSP's claims. The case is currently on appeal to the Eighth Circuit.

The district court granted Minnesota's motion to dismiss for three reasons.[311] First, the court ruled that the "public utilities exception" to the Dormant Commerce Clause "grants controlling weight to the monopoly market"[312] and thus allows states to enforce laws that will preference monopolies that serve captive in-state customers. Second, the district court held that, even if the exception does not apply, Minnesota's ROFR did not discriminate against out-of-state entities.[313] Finally, the court held, as a matter of law, that the state ROFR did not place an undue burden on interstate commerce under the *Pike* balancing test.[314]

First, the district court applied an expansive application of the "public utilities exception" that disregarded the nature of the market at issue. The court simply claimed that, because incumbent utilities in Minnesota are vertically integrated monopolies and thus not "similarly situated entities" as other would-be transmission developers, the Dormant Commerce Clause does not apply.[315] In *Tracy*, however, the Supreme Court focused on both the nature of the utilities and the nature of the markets to conclude that bundled natural gas utilities and unbundled natural gas marketers were not similarly situated entities from the perspective of the non-competitive, captive market over which the bundled gas utility had a monopoly.[316] At the same time, the Court observed that the bundled and unbundled gas providers *were* similarly situated in terms of the competitive non-captive market, where they were actively competing for retail customers.[317] Ultimately, the Court decided the bundled market would serve as the point of reference, because the competitive non-captive market would necessarily impact the utility's ability to provide reliable and affordable service in the

307 *Id.*
308 *Id.*
309 *Id.*
310 *Id.*
311 *Id.* at 705–11.
312 *Id.* at 705–07.
313 *Id.* at 708–09.
314 *Id.* at 709–10.
315 *Id.* at 708.
316 *Tracy*, 519 U.S. 278, 298–302 (1997).
317 *Id.* at 302–03.

noncompetitive captive market.[318] In *LSP*, in contrast, the district court did not evaluate the nature of the "markets" at all.[319] Instead, it simply declared, as a matter of law, that LSP and the incumbent utilities are not similarly situated because only the incumbent utilities are regulated monopolies.[320] The district court thus failed to understand that the incumbent utilities and LSP are direct competitors for the right to build regional transmission lines within MISO and are thus "similarly situated" when it comes to these lines.

The district court also failed to explain how competition to build the regional transmission lines would necessarily affect the incumbent utilities' ability to serve their captive retail customers. Unlike in *Tracy*, where the gas utilities and marketers were actively competing for the same retail customers,[321] *LSP* did not involve retail competition at all. Moreover, even without the state ROFR created in response to Order No. 1000, LSP was already limited from building many other transmission lines in the state; the transmission lines at issue included a specific and limited set of transmission lines identified through a regional process that will primarily transmit electricity from independent generators to utilities buying wholesale electricity.[322] It is unclear how non-incumbent development of these lines would affect the incumbent utilities' ability to serve their captive customers or profit from investment in transmission infrastructure that was not the subject of the MISO planning process. The district court in *LSP* did not support with facts any claim of impact. Thus, the district court's invocation of the "public utilities exception" was both overly broad and poorly explained.

Second, even if the "public utilities exception" did not apply, the district court also held that the Minnesota statute, which gives the ROFR only to "any public utility that owns, operates, and maintains an electric transmission line *in this state*,"[323] did not discriminate against interstate commerce, because some incumbent utilities that owned in-state transmission lines were headquartered out of state.[324] This interpretation would seem vulnerable to being overruled as a result of the Supreme Court's most recent Dormant Commerce Clause decision, *Tennessee Wine & Spirits Retailers Association v. Thomas*,[325] in which the Court invalidated a state law with an instate residency requirement that "blatantly favor[ed] the State's residents and ha[d] little relationship to public health and safety."[326] As in *Tennessee Wine*, the Minnesota instate requirement clearly favors some incumbents with

318 *Id.* at 304–07.
319 *LSP*, 329 F. Supp. 3d at 708.
320 *Id.*
321 *Tracy*, 519 U.S. at 302–03.
322 *See MISO Transmission Owners*, 819 F.3d 329, 332 (7th Cir. 2016).
323 MINN. STAT. § 216B.246 (2012) (emphasis added).
324 *LSP*, 329 F. Supp. 3d at 708–09.
325 No. 18-96, slip op. (U.S. June 26, 2019).
326 *Id.* at 2.

facilities located in the state, and it could be found discriminatory on that basis. On the other hand, it is possible that the appellate court could conclude that, because the Minnesota ROFR discriminates both in favor of some instate entities—i.e., those with existing transmission infrastructure in the state—and against others—i.e., those without existing transmission infrastructure in the state, it is not categorically discriminatory and thus permissible. While the instate language may raise concerns, it is unclear whether it rises to impermissible discrimination under the Dormant Commerce Clause.

However, even if the state ROFR is not considered discriminatory, the limits it places on transmission developers could create an undue burden on interstate commerce. Oddly, the district court held, as a matter of law, that the state ROFR did not impose an undue burden—but that inquiry should involve factual assessments.[327] Under the *Pike* undue burden test, a state or local law that regulates evenhandedly may be, but rarely is, struck down if a court determines that the law places an undue burden on interstate commerce.[328] Courts apply a balancing test that weighs the burden on interstate commerce against the "putative local benefits."[329] The law must aim to achieve legitimate public interests, which include the "health, life, and safety,"[330] as well as the economic well-being, of citizens.[331] Courts afford state and local legislatures a wide degree of deference regarding the purposes of a law, and courts should only strike down a neutral law if the burdens on interstate commerce are "clearly excessive" to the benefits of the law.[332] Because most non-discriminatory local laws have a legitimate basis and because the degree of interference on interstate commerce must be very high, LSP's invocation of the undue burden test was a long shot, and it would not have been surprising if LSP were unable to prove an undue burden.

And yet, the court's disposition of the claim on a motion to dismiss is surprising, because the court did not afford the parties the opportunity to adduce any facts.[333] Instead, the court cited case law to note that utility regulation is an important exercise of state police powers,[334] and it cited legislative findings that apply to Minnesota's utility regulation generally and that predate the enactment of the state ROFR by decades.[335] Nothing in the court's record or the specific

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327 *LSP*, 329 F. Supp. 3d at 703.

328 *Id.* at 697.

329 *Pike*, 397 U.S. 137, 142 (1970).

330 *Tracy*, 519 U.S. 278, 306 (1997).

331 *Id.*

332 *Pike*, 397 U.S. at 142.

333 *LSP*, 329 F. Supp. 3d at 704.

334 *Id.* at 709 (citing Ark. Elec. Co-op Corp. v. Ark. Pub. Serv. Comm'n, 461 U.S. 375, 377 (1983)).

335 *Id.* at 709–10 (citing MINN. STAT. § 216B.01 (2012)). Section 216B.01 includes the legislative findings for all of the state's laws that regulated public utilities. *See Chapter 216B. Public Utilities*, MINN. OFFICE OF THE REVISOR OF STATUTES, https://

legislation that created the ROFR cross-referenced the general legislative findings. Additionally, while the legislative findings make reference to the state's interest in ensuring "adequate and reliable services at reasonable rates," the avoidance of duplicate infrastructure, and dispute minimization,[336] none of these concerns seem to be at issue in the ROFR context, since MISO's transmission planning ensures the infrastructure is necessary. Indeed, FERC had found in Order No. 1000 that independent transmission development would result in adequate, reliable, and cost-effective service, and a competitive bidding process would create a fair transmission development process that would minimize disputes.[337] The court's refusal to allow further factual development of the case for a Dormant Commerce Clause prong that is inherently fact-dependent is therefore quite odd.

The district court's burden analysis was similarly fact-free, as it was based on a misreading of a footnote in *Tracy*.[338] In *Tracy*, the Supreme Court had noted that application of the *Pike* undue burden test had, at that time, resulted in the invalidation of very few nondiscriminatory laws, except "where such laws undermined a compelling need for national uniformity in regulation."[339] In the district court's view, FERC's refusal to preempt or prohibit state ROFR was evidence that national uniformity is not required. The district court therefore seemed to conclude, as a matter of law, that the Minnesota ROFR could not pose an undue burden. But *Tracy* did not state the undue burden test is a strictly legal question devoid of facts.[340] While it

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www.revisor.mn.gov/statutes/cite/216B (last visited Nov. 2, 2019). Section 216B.01 was last revised in 1989, *see id.*, while the state ROFR was passed in 2012, *see 216B.246, Federally Approved Transmission Lines: Incumbent Transmission Lineowner Rights,* MINN. OFFICE OF THE REVISOR OF STATUTES, https://perma.cc/NE96-PF73 (last visited Nov. 2, 2019).

336 MINN. STAT. § 216B.01.

337 Order No. 1000: Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, FERC Stats. & Regs. ¶ 61,051, 23 (2011).

338 *LSP*, 329 F. Supp. 3d, at 710.

339 *Tracy*, 519 U.S. 278, 298 n.12 (1997).

340 *Id.* Interestingly, the U.S. Department of Justice Antitrust Division filed a "Statement of Interest" in the lower court proceedings and an amicus brief in the appellate court. In its statement of interest and/or amicus brief, the DOJ has raised several issues related to the impacts and legality of the ROFR. First, the statement of the case argued that, while Order No. 1000 may have aimed to protect existing state and local grants of ROFR, it did not intend to authorize the creation of new ROFR rights. Since Minnesota passed its ROFR provisions in response to Order No. 1000, which aimed to create a new competitive system for transmission line development, the newly created state protections should be seen as overtly anticompetitive. Second, the DOJ's amicus brief also argues that the district court incorrectly focused on where incumbents are headquartered to conclude that the ROFR does not discriminate against out-of-state actors. According to the DOJ, Minnesota's law specifically gives the ROFR to companies that have an existing physical presence in the state; any company that would want to move into Minnesota to build new transmission lines would be excluded from the ROFR. By basing the ROFR on the physical presence, the DOJ argues, Minnesota's law is discriminatory. Third, the DOJ's amicus brief asserts that the district court read *Tracy* much too broadly. Its intervention could

may be difficult for parties to adduce the necessary facts to prove a neutral state law meets the onerous *Pike* test, that does not turn the test into a strict question of law.

Even with these flaws, however, it is unclear whether the Eighth Circuit will reverse the lower court or whether the Minnesota ROFR will be set aside under the Dormant Commerce Clause. While the law has elements that appear discriminatory and constrain many out-of-state actors from building new transmission lines, the Eighth Circuit may nonetheless uphold the law under traditional Dormant Commerce Clause analysis or by embracing the "public utilities exemption" articulated by the district court. As the next section explains, however, such an expansive exemption could undermine longstanding efforts to make transmission more competitive and accessible and to develop a more dynamic and multi-scalar grid.

V. IMPLICATIONS OF *LSP* FOR COMPETITIVE TRANSMISSION DEVELOPMENT, ACCESS, AND THE ENERGY TRANSITION

The ruling in *LSP* has worrisome implications for competitive transmission development and access well outside of Minnesota or even MISO's territory. If the Eighth Circuit affirms the district court's dismissal, other states will know that they can develop their own state ROFR mechanisms that guarantee incumbent, in-state transmission-owning utilities the right to build new transmission infrastructure. Even though FERC earlier determined that incumbency protections stifle transmission line planning and increase customer costs,[341] states will nonetheless be entitled to protect their incumbent state-based utilities from market forces and would-be competitors. At best, this will limit the pool of possible transmission developers, lower the incentives for innovation and lower-cost transmission designs, and raise the prices of transmission service for power producers and, ultimately, ratepayers.[342] Moreover, the decision could have impacts that go far beyond the transmission system and undermine the necessary transition to a dynamic, multi-scalar, and decarbonized energy system.

The impacts on transmission planning are worrisome. Within RTOs and ISOs, non-incumbent transmission developers will have less incentive to engage in regional planning, even though these developers are also often independent generators who have a sophisticated understanding of where new renewable facilities will likely be sited. The transmission lines at issue in *LSP* were identified by the MISO RTO as necessary to accommodate new power generation and meet regional

signal that antitrust law could see a resurgence in the electricity sector, at least where states pass laws designed to undermine FERC's pro-competition rules.

341 Order No. 1000, 76 Fed. Reg. at 49,885 (2011).

342 *See id.*

electricity needs.[343] Members of MISO participated in an extended stakeholder process to project transmission needs, based on where energy forecasters expected wind farms, utility-scale solar arrays, and other new power plants to be sited.[344] These forecasters analyzed state policies (including RPSs), federal policies, meteorological data, and market forecasts to develop their transmission plans,[345] and they benefitted from the input of non-incumbent IPPs, as well as independent merchant transmission providers, to provide essential data.[346] In the future, it is hard to imagine why merchant transmission providers and other non-incumbents would participate in regional planning if they have nothing to gain in the end.

Transmission planning outside of an RTO's footprint will likely be even worse. RTOs are at least subject to FERC oversight and regulation, and are thus obligated to perform transmission planning that covers their geographic footprint.[347] They are also more willing to conduct regional and inter-regional planning with other RTOs and ISOs.[348] Utilities outside of an RTO or ISO's territory, however, have little incentive to engage in meaningful regional planning unless the planning will benefit the utilities specifically.[349] But since the service territories of existing utilities are limited, many utilities will not seek to identify transmission development needs that extend outside their existing territories or that the utilities themselves will not be entitled to build.[350] Thus, as FERC warned when it issued Order No. 1000, the perpetuation of a ROFR is more likely to impede effective planning, suppress innovation, and raise costs.[351]

Beyond the specific impacts of the ROFR, an expansive interpretation of the "public utilities exception" could also make regional transmission line siting even more difficult than it already is. As Alexandra Klass and her co-authors have described, many states limit eligibility for transmission infrastructure siting permits to instate utilities.[352] Such instate restrictions would seem to violate the Dormant Commerce Clause's prohibition against facial and implied

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343 MISO ECONOMIC PLANNING USERS GROUP, MTEP16 MCPS UPDATE – NORTH /CENTRAL 11 (2016), https://perma.cc/8NJZ-NTWU.

344 MISO ECONOMIC PLANNING USERS GROUP, MTEP16 MCPS NORTH/CENTRAL: UPDATE 7 (2016), https://perma.cc/V6N4-X85T.

345 *See* Application of Xcel Energy and ITC Midwest L.L.C. for a Certificate of Need and a Route Permit Application for the Huntley-Wilmarth 345kV Transmission Line Project, 2019 WL 2663015 (2019).

346 *Id.* at 26.

347 Order No. 1000, 76 Fed. Reg. at 49,958 (2011).

348 *Id.*

349 *See* Glick & Christiansen, *supra* note 8, at 38–39.

350 Order No. 1000, 76 Fed. Reg. at 49,881–86.

351 *Id.*

352 *See* Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10756; Klass & Rossi, *supra* note 147, at 130–31, 189–93; *See generally* Alexandra B. Klass, *The Electric Grid at a Crossroads: A Regional Approach to Siting Transmission Lines*, 48 U.C. DAVIS L. REV. 1895 (2015).

discrimination.[353] But if courts adopt the district court's expansive reading of the "public utilities exception," which seems to suggest that public utilities are categorically exempt from the Dormant Commerce Clause, instate siting restrictions would likely be legal. Such an outcome would be devastating for regional transmission development, as "all the regional planning in the world cannot overcome state siting procedures that focus narrowly on in-state need"[354] or limit eligibility to instate utilities.

A decision that upholds the Minnesota ROFR will also expose customers to higher risks of stranded costs in the future. Incumbent utilities profit through the rate of return they receive on their capital investments—this explains, in part, why they want the protection of a state ROFR.[355] Once a regulator gives a regulated utility authorization to build new long-lived assets, the regulator is, in essence, promising the utility that it will be entitled to collect revenue from captive ratepayers for the life of that investment.[356] Ratepayers thus bear the risk that the utility's investment may not be economical, and they are often stuck bailing utilities out when their investments go bad.[357] Even if a specific investment in a transmission line may be sound, utilities throughout the United States have trillions of dollars sunk into fossil fuel assets that could become stranded.[358] The more these utilities are propped up by being allowed to make new investments in expensive capital assets, the more locked into the incumbent's business ratepayers will be. This is not the same when a merchant transmission developer is building new infrastructure; merchant developers bear more risk.[359] Thus, the perpetuation of incumbent utilities foregoes the risk-shifting that competitive transmission development would otherwise provide.

Beyond the transmission system, the resolution of the Dormant Commerce Clause challenge in *LSP* could affect who will be entitled to participate in, and benefit from, the transition to a dynamic and decarbonized energy system. The *LSP* case arose from a state decision that allows incumbent utilities to maintain their monopolies over parts of the energy system that are no longer naturally monopolistic,[360] and in contravention of FERC findings that the federal ROFR would undermine effective planning, innovation, and cost-effective development.[361] There is little reason that a state would not feel

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353 *See Tenn. Wine & Spirits Retailers Ass'n*, 139 S. Ct. 2449 (2019); Klass & Rossi, *supra* note 147, at 183.

354 *See* Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10,756.

355 *See supra* notes 100–104 and accompanying text.

356 *See supra* notes 100–104 and accompanying text.

357 *See supra* notes 100–104 and accompanying text.

358 *See supra* notes 100–104 and accompanying text.

359 *See* Klass, *Expanding U.S. Transmission for Deep Decarbonization*, *supra* note 9, at 10,750 n.6 (explaining how merchant transmission developers are compensated).

360 *See LSP*, 329 F. Supp. 3d 695, 702 (D. Minn. 2018).

361 *See id.* at 703.

emboldened to further prop up its utilities by allowing only in-state utilities to participate in generation and the myriad services a decarbonized electricity system requires. As discussed above, independent producers are already facing a backlash to PURPA and net metering, and incumbent utilities have begun to develop their own renewable resources in an effort to hold onto their vertically integrated monopolies.[362] A decision in favor of Minnesota in *LSP* could provide a means for states to further solidify the outdated bundled utility business model.

To be sure, the Dormant Commerce Clause is not the optimal tool to facilitate forward-looking regional transmission planning or competitive development planning. Nor is it the best tool to transition the U.S. energy system into a decarbonized, dynamic, and multi-scalar energy system. However, while it may not be the best tool, the resolution of the *LSP* Dormant Commerce Clause challenge will nonetheless have profound implications on the energy transition.

VI. CONCLUSION

The *LSP* litigation and the ongoing saga regarding competitive transmission and competitive markets more generally should concern anyone engaged in energy decarbonization efforts and the promotion of open, innovative, and competitive markets. An expansive interpretation of the "public utilities exception" to the Dormant Commerce Clause could clear the way for many more protectionist and regressive state laws that cut independent actors out of the energy transition—just when they are most needed.

This does not have to happen, however. *LSP* is such a consequential case because FERC failed to follow the reasons underlying its decision to revoke the federal ROFR to their logical conclusion. FERC should not have bowed to state and incumbent utility pressure by allowing state ROFR to persist or be newly created. FERC has the authority and the responsibility to revisit its protection of state laws under Order No. 1000 and to preempt states from enacting more anti-competitive laws moving forward. To ensure a swift and just transition to a dynamic, decarbonized, and multi-scalar energy system, FERC should exercise its power to eliminate state ROFR rules.

Indeed, FERC should go beyond this. The energy transition will be disruptive, expensive, and challenging no matter what. FERC can add stability and certainty by making it clear that the decarbonized energy system will indeed be both competitive and well-regulated.

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[362] *See supra* notes 128–132 and accompanying text.