CITIES AND THE LOW-CARBON GRID

BY
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Over the last decade, cities across the nation have pursued local initiatives to mitigate climate change. These efforts, however, have been significantly hampered by cities' dependence on an electric power industry that has fought climate policies at the state and federal levels to defend its reliance on fossil fuels. Yet changes now underway in the electricity sector—including President Obama's Clean Power Plan and related initiatives—are unsettling the traditional utility model and fueling a low-carbon shift that will affect federal, regional, state, and local levels of energy governance. This Article maps the evolving landscape for cities and the low-carbon grid at this critical juncture, and is the first to take up the implications of the U.S. grid transition for cities working to align their electricity profile with community climate aspirations. In charting existing and emerging approaches to community-scale utility ownership and energy localization, the Article explores the legal landscape shaping cities' potential to advance the low-carbon grid.

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I. INTRODUCTION

In a place like Boulder, it is a mark of shame: "Boulder's energy supply is one of the most carbon-intensive in the nation."[1] The force of this realization prompted the environmentally progressive Colorado city to begin a multiyear exploration into the legal and practical possibilities of creating a publicly-owned city utility—divorcing investor-owned Xcel Energy, which currently provides electricity to the area, to align Boulder's energy profile with the values of the community.[2]

More than a decade ago, Boulder was among the first U.S. cities to develop a local agenda for climate change mitigation. It signaled support for the Kyoto Protocol by setting a local goal of reducing greenhouse gas emissions to seven percent below 1990 levels by 2012.[3] The city's Climate Action Plan included what the city is proud to call "the nation's first 'carbon tax'" and other initiatives to reduce environmental impacts, including the kinds of energy efficiency, transportation, and waste management strategies many other cities also employ.[4] Yet as time went on, it was clear that dependence on Xcel Energy for electricity is a significant limitation on Boulder's ability to meet its carbon reduction goals.[5] In Colorado, Xcel's

[1] City of Boulder, *About the Boulder Energy Future Project*, https://bouldercolorado.gov/energy-future/energy-future-about (last visited Feb. 6, 2016); *see also* City of Boulder, *Coal & Carbon Intensity*, https://bouldercolorado.gov/energy-future/coal-carbon-intensity (last visited Feb. 6, 2016) (explaining methodology for determining carbon intensity of the city's electricity).

[2] The City of Boulder, Colorado's franchise agreement was with the Public Service Company of Colorado, which subsequently became Xcel Energy, Inc. *See* R.W. BECK, FINAL REPORT: PRELIMINARY MUNICIPALIZATION FEASIBILITY STUDY, CITY OF BOULDER, COLORADO 1-1 (2005).

[3] CITY OF BOULDER, CLEAN RELIABLE LOW-COST LOCAL ENERGY: COMMUNITY GUIDE 2 (2013). The Kyoto Protocol is an agreement among nations under the United Nations Framework Convention on Climate Change that was designed to cut greenhouse gas emissions. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 12, Dec. 10, 1997, 37 I.L.M. 22 (1998), *available at* http://unfccc.int/resource/docs/convkp/kpeng.pdf. The United States did not sign the Protocol, but some cities, like Boulder, set local goals aligned with the Kyoto Protocol. *See* City of Boulder, *About the Boulder Energy Future Project*, *supra* note 1.

[4] CITY OF BOULDER, COMMUNITY GUIDE, *supra* note 3.

[5] *Id.*

2013 resource mix was over seventy-five percent fossil energy, mostly coal.[6] Boulder and its residents have no control over the resources Xcel chooses to generate electricity. Those decisions are internal to Xcel with shareholder interests being a key consideration by virtue of its investor-owned business structure.[7] In the words of Justice Holmes, "[t]he private corporation, whatever its public duties, is organized for private ends and may be presumed to intend to make whatever profit the business will allow."[8]

Boulder is not alone in its frustration with status quo fossil fuel-based electricity. In 2013, the *New York Times* reported on cities' "interest in taking over the electricity business from private utilities" based on "intensifying concerns about climate change, responses to power disruptions and a desire to pump more renewable energy into the grid."[9] Indeed, hundreds of cities across the nation have committed to curbing emissions, yet have lacked the ability to meaningfully reduce the use of electricity generated from fossil fuels. At last year's United Nations Climate Summit in New York City, cities around the world signed a Compact of Mayors to highlight the importance of city engagement to climate change mitigation.[10] Working in traditional spheres of local control, it is clear that cities can curb emissions in meaningful ways. According to the Compact, climate action by cities "in three sectors alone—buildings, transportation, and waste—would make an impact greater than the total emissions of the United States and the 28 member states of the European Union combined."[11] In the United States, where power plants are the biggest source of emissions,[12] cities could do more if their dependence on investor-owned utilities did not leave them disconnected from electricity resource decisions. Keenly conscious of this limitation, Boulder's "energy localization" effort envisions the ability to

6 City of Boulder, *Coal & Carbon Intensity*, *supra* note 1.

7 A note on terminology is in order, as the use of overlapping terms in the area of the electricity regulation can confuse readers. The most important distinction is that what is commonly referred to a "public utility" is in fact an investor-owned utility subject to a regulatory compact to provide a public service. This Article uses this term, or the acronym IOU, to distinguish the publicly-owned utility, also commonly referred to as municipal or city utility. It is with this category of utility that this Article is largely but not exclusively concerned. Federal power systems, such as the Tennessee Valley Authority and the Bonneville Power Administration, are publicly owned as well, though they are generally considered in a category to themselves and are not the focus of this Article. Public power districts are less common but can be usefully thought of as another variation of public ownership.

8 Springfield Gas & Elec. Co. v. Springfield, 257 U.S. 66, 70 (1921) (responding to an investor-owned utility's challenge to municipal competition).

9 Diane Cardwell, *Cities Weigh Taking Over from Private Utilities*, N.Y. TIMES, Mar. 13, 2013, http://nyti.ms/1zYnBAC (last visited Feb. 6, 2016).

10 Clayton Lane, *With Compact of Mayors, Cities Lead on Tackling Climate Change at U.N. Summit*, WORLD RESOURCES INST.: THECITYFIX, Sept. 30, 2014, http://thecityfix.com/blog/compact-mayors-cities-lead-tackling-climate-change-united-nation-summit-gpc-iclei-c40-clayton-lane/ (last visited Feb. 6, 2016).

11 COMPACT OF MAYORS, FULL GUIDE TO COMPLIANCE 2 (2015), *available at* http://www.compactofmayors.org/content/uploads/sites/14/2015/07/Compact-of-Mayors-Full-Guide_July2015.pdf.

12 U.S. Envtl. Prot. Agency, *Climate Change: Sources of Greenhouse Gas Emissions* (2013), http://www3.epa.gov/climatechange/ghgemissions/sources.html (last visited Feb. 6, 2016).

"democratize energy decision making," to "decentralize energy generation and management" with more emphasis on local resources, and most importantly, to "decarbonize the energy supply."[13]

Considering the predicament of communities like Boulder raises questions that reach beyond its local boundaries to cities across the United States at a time when energy's wider policy context is increasingly centered on a low-carbon shift and the structure of the electric power industry is in flux.[14] What options exist in this dynamic environment for cities to advance the energy transition? One possibility is the public ownership model Boulder is pursuing[15]—an option Minneapolis also recently explored.[16] How do city utilities' legal and practical contexts affect their ability to achieve local ambitions for cutting fossil energy consumption? What constraints affect the feasibility of municipalization— creating a new city utility to localize control over a community's electric power?[17] If a city concludes, as Minneapolis ultimately did, that public ownership is not a wise course, what leverage do cities have to help align incumbent investor-owned utilities with local climate goals? Do alternative models for energy localization provide other options for cities embracing a low-carbon future?

These questions are important to this transitional moment in the electricity sector for several reasons. First, the electric power industry faces widespread doubts over the traditional public utility model's continued

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13 City of Boulder, *Goals & Objectives*, https://bouldercolorado.gov/energy-future/energy-future-goals-and-objectives (last visited Feb. 6, 2016). Boulder incorporated public input to define three primary goals for its "energy localization framework":

> *Democratize Energy Decision Making:* Boulder customers should have *more direct control* and involvement in decisions about their energy, including *opportunities to invest* in their long-term energy needs and to have a say in energy investments made on their behalf.
>
> *Decentralize Energy Generation and Management:* energy should be *generated locally* or within the region to the maximum extent feasible, *reducing reliance on external fuel sources;* customers should be able to manage and *reduce their energy use* as directly and effectively as possible; and energy service companies should be *empowered to compete and innovate* within a diverse and robust *local energy economy.*
>
> *Decarbonize the Energy Supply:* renewable and clean fuel sources should be maximized as much as possible, as quickly as possible, minimizing both short- and long-term *environmental impacts* and maximizing *energy independence* over time.

Id. (emphasis in original).

14 Gavin Bade, *The Top 10 Trends Transforming the Electric Power Sector*, UTILITY DIVE, Sept. 17, 2015, http://www.utilitydive.com/news/the-top-10-trends-transforming-the-electric-power-sector/405798/ (last visited Feb. 6, 2016).

15 City of Boulder, *Energy Future Home*, https://bouldercolorado.gov/energy-future (last visited Feb. 6, 2016). See City of Boulder, *Goals & Objectives*, *supra* note 13, for the goals and objectives of Boulder's municipalization plan.

16 Frank Jossi, *Minneapolis Utility Fight Ends with Unique Clean-Energy Deal*, MIDWEST ENERGY NEWS, Oct. 17, 2014, http://midwestenergynews.com/2014/10/17/minneapolis-utility-fight-ends-with-unique-clean-energy-deal/ (last visited Feb. 6, 2016).

17 Suedeen G. Kelly, *Municipalization of Electricity: The Allure of Lower Rates for Bright Lights in Big Cities*, 37 NAT. RESOURCES J. 43, 44 (1997).

viability in a low-carbon energy sector.[18] Existing utilities, both investor and city-owned, are being forced to adapt to new consumer demand for renewable energy, to stricter environmental regulation of power plants, and to "disruptive" technologies, for capturing and storing renewable energy and for modernizing the electric grid.[19] In a recent interview, the CEO of San Antonio's city utility characterized these developments as inevitable. "Whether you agree or disagree with it is somewhat irrelevant," he said, concluding it is "much better to be prepared and try to be at the table to work with it."[20] Although responses to these pressures have varied across the industry, the mainstreamed utility "death spiral" meme reflects fear in the face of threats to the status quo.[21] This Article engages, among other things, how existing law and the traditional utility model affect the capacity of cities already operating local utilities to adapt and advance a smooth sector-wide transition.

Second, the process in Boulder and Minneapolis underscores the idea that with transition comes the possibility for reinvention. For many years, scholars and analysts have argued the relative merits of public or private utility ownership, but that dichotomy does not capture the multifaceted structure of today's electricity sector.[22] Boulder's vision exemplifies that

18 *See, e.g.*, William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1669 (2014) (considering the need to evolve the traditional structure of the electric utilities to align with low-carbon objectives); Joseph Tomain, *"Steel in the Ground:" Greening the Grid with the iUtility*, 39 ENVTL. L. 931 (2009) (envisioning an alternative to the traditional electric utility with a shift in emphasis to energy services rather than electricity as a commodity).

19 *See* Kenneth W. Costello & Ross C. Hemphill, *Electric Utilities' "Death Spiral": Hyperbole or Reality?*, 27 ELECTRICITY J., Dec. 2014, at 7, 9, 22 n.69.

20 Edward Klump, *Texas Utility CEO Describes "Inevitability" of Low-Carbon Future*, E&E NEWS, Oct. 1, 2014 (quoting Doyle Beneby, CEO of CPS Energy, a municipal electricity and natural gas provider in San Antonio, Texas).

21 This is not the first time the utility "death spiral" meme has been a central feature of transition debate in the electricity sector. In the 1980s, utility economists Kenneth Costello and Ross Hemphill explain, "the term 'death spiral' was part of the lexicon over the growing public discontent over the sharp rise in electricity prices from large utility construction programs." Costello & Hemphill, *supra* note 19, at 8. The authors observe that "[w]ith hindsight, past death-spiral claims for the electricity industry have been exaggerated," *id.* at 8, and conclude that "the same hyperbole holds for the current threat." *Id.* at 22.

22 *See, e.g.*, Donald G. Balmer, *From Symbiosis to Synergy: A Case Study of Public and Private Electric Power in the Pacific Northwest*, 13 ENVTL. L. 637, 637 (1983) ("The public versus private power issue has been one of the most persistent and dramatic controversies in twentieth-century American politics."). *See also* Alan Richardson & John Kelly, *The Relevance and Importance of Public Power in the United States*, 19 NAT. RESOURCES & ENV'T 54, 54 (2005) (arguing continued importance of public power); Alan Richardson, *The Role and Performance of Public Power: Separating Fact from Ideology*, 12 ELECTRICITY J., June 1999, at 13 (highlighting superior rates for public power over private utilities and other advantages of public power); Robert J. Michaels, *Would Anyone Invent Public Power Today? Can Anyone Reinvent It?*, 12 ELECTRICITY J., Nov. 1997, at 22 (questioning public power model in increasingly competitive market); Paul A. Meyer, *The Municipally Owned Electric Company's Exemption From Utility Commission Regulation: The Consumer's Perspective*, 33 CASE W. RES. L. REV. 294, 323 (1983) (arguing for state PUC regulation of municipal utilities due to perceived risks of inefficient self-regulation); Susan D. Fendell, Comment, *Public Ownership of Public Utilities: Have Stockholders Outlived Their Useful Economic Lives*, 43 OHIO ST. L.J. 821, 825 (1982) (critiquing private utilities role in the electric power industry).

energy's trajectory is changing with the low-carbon imperative driving transition. New interest in the public power model may be less about the model itself, and more about the aims the model is perceived as able to serve. By exploring alternative models for energy localization, this Article refreshes the public–private debate with a focus on cities, not to pronounce a one-is-better-than-the-other conclusion, but to situate cities on the low-carbon grid as traditional utility models that are evolving and sharing space with new modes of delivering energy services. This is important because most cities in the United States are served by investor-owned utilities and, for most, that is unlikely to change.

Third, the role of cities in shaping a modern, low-carbon grid is an especially timely subject for study in the context of global recognition for cities' leadership in climate policy. Current estimates show seventy percent of energy-related greenhouse gas emissions come from cities worldwide.[23] Building energy-efficient urban environments and transportation systems are key elements of climate mitigation, and city governments are generally positioned well to address these, challenging as they may be.[24] Increasingly, however, city-scale influence is possible in the electric power sector as well, and the opportunities for cities vary not just by country, but also subnationally by state. This Article maps the United States' legal context for that influence.

Part II provides a brief history of how cities have contributed to development of the electric grid in the United States. As early and active participants in the electricity sector through public ownership of utilities serving local residents, competition between cities and privately-owned utilities helped define the jurisdictional and conceptual foundations of energy law.

Part III outlines the legal regimes that affect cities' position within the electricity sector. It highlights the implications of differential treatment for city utilities and investor-owned utilities (IOUs) under federal and state law in this energy transition. From the Federal Power Act (FPA),[25] administered by the Federal Energy Regulatory Commission (FERC), to renewable energy laws enacted in more than half the states, publicly-owned utilities (POUs) occupy a unique legal space within the industry. Part III then turns to the more common city experience of reliance on an IOU. It describes the legal

23 GLOBAL COMM'N ON ENERGY AND THE ENV'T, BETTER GROWTH, BETTER CLIMATE: THE NEW CLIMATE ECONOMY REPORT, Ch. 2: Cities 4 (2014) (citing the Intergovernmental Panel on Climate Change).

24 *See id.* (detailing how compact urban land development and transportation policy are key areas for cities to implement low-carbon energy policy). *See also* ALEXANDRA AZNAR ET AL., CITY LEVEL ENERGY DECISION-MAKING: DATA USE IN ENERGY PLANNING, IMPLEMENTATION, AND EVALUATION IN U.S. CITIES 23–24 (2015) (explaining that cities commonly focus on energy and greenhouse gas emissions reductions and reporting that cities surveyed about energy related activities "mention the fewest activities in the Electricity Supply and Infrastructure sector, likely due to the perception that cities without a municipal utility have limited ability to impact energy markets and electricity regulation."). *Id.*

25 Federal Power Act, Pub. L. No. 74-333, 49 Stat. 803, 838–63 (1935) (codified as amended at 16 U.S.C. §§ 791–828c (2012)).

structure of cities' relationships with IOUs providing electricity in their jurisdiction, and the effect of this structure on cities' legal ability to influence the resources used to generate electric power.

Part IV addresses the legal context for cities seeking to advance the low-carbon energy shift. First, it considers the options and constraints on these cities, looking first to the law structuring green municipalization. While Boulder continues its pursuit of this possibility, the city of Minneapolis ultimately struck an agreement to continue service from its IOU under new terms. The experiences of these two progressive cities demonstrate how renewed interest in public power confronts legal and practical challenges that make municipalization an important but difficult option. At the same time, it suggests that the dynamic environment for electricity today opens new pathways for city influence. With that in mind, Part IV then turns to the legal environment for alternative approaches to "energy localization" that may be pursued adjacent to or in partnership with private utilities. The City-Utility Clean Energy Partnership in Minneapolis offers an early example. Another model, community choice aggregation, offers a framework for local governments to combine their purchasing power to exert energy resource preferences.[26] Community power projects, an emerging alternative to on-site distributed generation (e.g., rooftop solar) in the form of an off-site project (e.g., solar panel array) can serve customers in close proximity on the neighborhood scale. These models provide avenues for local governments and communities to affect energy resource decisions in ways distinct from the direct control afforded by utility ownership. However, both models face legal barriers in many states. Refreshed engagement with community-scale energy in the United States reflects growing interest in narrowing the space between electricity consumption and the resource decisions that affect its environmental impact. Local generation of electricity is one means of achieving this, but other models for increased local influence exist and continue to emerge. The Article concludes by connecting the prospects for U.S. cities and the low-carbon grid with burgeoning international recognition of cities' role in climate change policy. In charting the legal landscape for these cities, this Article shows that cities have increasing options to advance the low-carbon transition for electric power.

II. CITIES AND DEVELOPMENT OF THE MODERN ELECTRIC GRID

Cities were an early and important force in the development of the modern electric grid.[27] Today, the context for a low-carbon transition, and where cities fit in, is shaped as much by what technology and policy innovation makes possible as by the historical development of electric power over more than a century. That history reflects an industry shaped by

26 *See infra* Part IV.C.1.

27 Alexandra B. Klass, *The Electric Grid at a Crossroads: A Regional Approach to Siting Transmission Lines*, 48 U.C. DAVIS L. REV. 1895, 1912–13 (2015).

multiple seismic transitions—rapid United States electrification, shifting geopolitical dynamics, emergent technologies, domestic regulatory and market transformations—still reverberating as the backdrop for the shift underway.

As a starting point for understanding cities' position in the new energy transition, this Part traces the emergence of city-owned utilities: how they evolved as the electric power industry grew and how competing attributes of private and public ownership influenced the grid's development and its relevant legal frameworks. This Part then situates cities, with and without their own utilities, in the modern electricity landscape.

A. Evolution of the City Utility

When electricity lit up the American cityscape in the 1880s, city electric utilities propagated alongside private companies as key drivers of electrification. The city-utility franchise agreements that structured the electric service relationship between cities and private utilities had the potential for meaningful regulatory function.[28] But that potential was largely unrealized when franchise terms favored utilities' interests.[29] Dissatisfaction with private utilities spurred the so-called "golden days of municipal ownership" of the early 1920s, which saw the formation of over 3,000 POUs.[30] A *Yale Law Journal* piece from the period observed the early "campaign for municipal ownership" as stemming from anger against investor-owned utilities for their "greed," "negligence," and "overreaching the community in getting franchises,"[31] more than "by confidence in public management."[32]

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28 CHARLES F. PHILLIPS, JR., THE REGULATION OF PUBLIC UTILITIES: THEORY AND PRACTICE 120, 144 (1988). *See also* William K. Jones, *Origins of the Certificate of Public Convenience and Necessity: Developments in the States, 1870–1920*, 79 COLUM. L. REV. 426, 431 (1979) (describing the early regulatory function of municipal franchises before the widespread creation of state public utility commissions).

29 Jones, *supra* note 28, at 431. *See also* Scott E. Masten, *Public Utility Ownership in 19th-Century America: The "Aberrant" Case of Water*, 27 J.L. ECON. & ORG. 604 (2011) (discussing trade-offs between public ownership and franchise contracting with private utilities).

30 Delia Patterson & Alice Clamp, *Public Power: Relevant Then, Relevant Now*, 26 ELECTRICITY J., July 2013, at 91, 92.

31 Carmen Randolph, *Municipal Ownership of Public Utilities*, 22 YALE L.J. 461, 477 (1913).

32 *Id.* at 476. *See also* DAVID SCHAP, MUNICIPAL OWNERSHIP IN THE ELECTRIC UTILITY INDUSTRY: A CENTENNIAL VIEW 21 (1986) (characterizing public demand for municipal ownership as less of "a positive statement of confidence in the ability of municipal government as it was an expression of distaste for the corrupting influences of the corporations"); HAROLD L. PLATT, THE ELECTRIC CITY: ENERGY AND THE GROWTH OF THE CHICAGO AREA, 1880–1930 52 (1991) (describing how Chicago's "oldest and most influential civic group, the Citizens Association turned its attention . . . to consumers' interest in the business conduct of privately owned urban utilities," a decision, he argues, "gave birth to a mass movement for municipal reform"). Of course, political corruption and mismanagement was also seen in municipal utilities during this period. *See* DAVID E. NYE, ELECTRIFYING AMERICA: SOCIAL MEANINGS OF A NEW TECHNOLOGY, 1880–1940 7 (1990) (depicting Muncie, Indiana's street lighting system as exemplifying "the mismanagement and corruption common in government during the late nineteenth century"). According to Nye's account, "hiring decisions at utilities were often based more on political patronage than engineering knowledge, and municipal utility contracts all too often were negotiated with graft

Some worried the movement represented creeping socialism.[33] But cheap power was another motivation; with its own power plant, for example, Cleveland, Ohio reportedly cut rates to less than half of what they had been with a prior private utility.[34] In the face of this unwanted competition from cities, private power companies increasingly viewed the creation of state utility commissions as beneficial to their industry position.[35] Counterintuitive as it may seem, historian David Nye recounts this support for state regulation as private power's "most effective tactic" against campaigns for local control; among other things, it allowed private power companies to concentrate their lobbying efforts and avoid the unpredictability of local processes.[36] Nearly every state had established a utility commission by the early 1920s.[37]

Private power companies also fought local competition in the courts. Although lawsuits were often effective to stymie municipal ambitions,[38] the short but significant Supreme Court opinion in *Springfield Gas & Electric Co. v. City of Springfield*[39] solidified the basic premise that city utilities could produce and sell electricity at their own rates.[40] Springfield Gas & Electric, facing competition from the city of Springfield, Illinois, argued that Illinois's Public Utilities Act and Municipal Ownership Act violated the Fourteenth Amendment to the Constitution by allowing municipal corporations "to go into this business among others and to fix the rates" while Springfield Gas & Electric's rates were "subject to the approval of the State Public Utilities Commission."[41] The Court rejected the argument, holding the state laws were constitutional because "the difference between the two types of corporations warrants the different treatment that they have received."[42] A private corporation, the Court explained, "whatever its public duties is organized for private ends," but for a municipal corporation, "[s]o far as gain is an object it is a gain to a public body and must be used for public ends."[43]

and kickbacks." *Id. See also* SCHAP, *supra*, at 22–26 (describing forms of corruption in early municipal systems).

33 *See* Charles Waldo Haskins & Joseph French Johnson, *Recent History of Municipal Ownership in the United States*, 6 MUN. AFF. 524 (1902–1903) (advocating for public electric power was criticized as "savoring strongly of socialistic propaganda").

34 *See* sources cited *supra* note 32 (describing political context for local shift from private to public power); RICHARD RUDOLPH & SCOTT RIDLEY, POWER STRUGGLE: THE HUNDRED-YEAR WAR OVER ELECTRICITY 24–26, 37–38 (1986) (discussing Cleveland's electrification).

35 NYE, *supra* note 32, at 180.

36 *Id.* at 180–81. *See also* PLATT, *supra* note 32, at 124–37 (describing how utility monopolist Samuel Insull "bravely called for public regulation" at a meeting of the National Electric Light Association in 1898); RUDOLPH & RIDLEY, *supra* note 34, at 38–39.

37 RUDOLPH & RIDLEY, *supra* note 34, at 40.

38 *See* NYE, *supra* note 32, at 180 (offering examples from Muncie, Indiana and New York City).

39 257 U.S. 66 (1921).

40 *See id.* (holding that municipal corporations can produce and sell electricity at their own rates).

41 *Id.* at 69.

42 *Id.*

43 *Id.* at 70.

Irrespective of this validation, over the next decade, many city utilities succumbed to competition from IOUs, which had engaged in profligate use of holding companies to evade the full effect of state regulation.[44] A *Yale Law Journal* comment from the period describes how the holding company "was divorced from its legitimate function of affording efficient management, becoming rather a vehicle for the selfish manipulation of properties and for financial profiteering."[45] That trend had a dramatic consolidating effect: "Pyramiding and combinations," the comment states, "have been so extensive that in 1929 sixteen holding company groups controlled 92% of the power produced by private companies in the United States."[46]

In a 1932 campaign address, soon-to-be President Franklin Roosevelt criticized holding company abuses and spoke to the value of preserving public power in the electricity industry.[47] He emphasized its importance with a now famous analogy, comparing "the right of people to own and operate their own utility" to "a 'birch rod' in the cupboard to be taken out and used only when the 'child' gets beyond the point where a mere scolding does no good."[48] Although dated by reference to modern parenting norms, the metaphor expressed his conviction that the presence, and even mere prospect, of competition from city utilities had a grounding effect on IOUs, keeping them mindful of their obligations to the public and providing a measure for comparing service performance and rates.[49] Railing against utility monopolist Samuel Insull, Roosevelt called holding companies "fraudulent monstrosities" for which the public had "paid dearly."[50] They imposed risks not just on investors, but on electricity consumers as well, exposing them to service interruptions when risky ventures led to bankruptcies and rates inflated by cross-subsidized affiliate transactions.[51]

During Roosevelt's presidency, the federal government responded to these abuses with a suite of actions—among them, establishing the

44 Comment, *Federal Regulation of Holding Companies: The Public Utility Act of 1935*, 45 YALE L.J. 468, 471, 478 (1936).

45 *Id.* at 470–71.

46 *Id.* at 471.

47 Franklin D. Roosevelt, Campaign Address in Portland, Oregon on Public Utilities and Development of Hydro-Electric Power (Sept. 21, 1932), http://www.presidency.ucsb.edu/ws/?pid=88390 (last visited Feb. 6, 2016).

48 *Id.* This campaign trail speech to 8,000 people in Portland, Oregon was "the most thorough exposition of Roosevelt's positions on electric power" and prefaced the energy policy platform for his Presidency. *See* RUDOLPH & RIDLEY, *supra* note 34, at 67.

49 RUDOLPH & RIDLEY, *supra* note 34, at 67.

50 *See* Roosevelt, *supra* note 47.

51 *See id.* (indicating that Roosevelt sought "to protect both the consumer and the investor"); U.S. GOV'T ACCOUNTABILITY OFFICE, UTILITY OVERSIGHT: RECENT CHANGES IN LAW CALL FOR IMPROVED VIGILANCE BY FERC 2–3 (2008), *available at* http://www.gao.gov/assets/280/272629.pdf (describing reasons for the Public Utility Holding Company Act of 1955 enactment in the context of analyzing effects of the law's repeal and replacement via the Energy Policy Act of 2005, which among other things, shifted responsibilities for certain oversight functions from the Securities and Exchange Commission to the Federal Energy Regulatory Commission and the states).

Securities and Exchange Commission in 1934[52] and enacting both the Federal Power Act of 1935,[53] to regulate interstate electricity transmission and wholesale transactions, and the Public Utility Holding Company Act of 1935 (PUHCA),[54] to constrain illegitimate use of holding companies.[55] Consumer advocates regard the PUHCA as "one of the most important federal consumer protection laws ever passed"[56] and it opened a way for public power's further expansion.[57] The number of city utilities never returned to its early heights, but by the end of the 1930s, with this and other federal support, they leveled off around 2,000 strong.[58]

Concurrent with increased federal oversight of electric utilities, Congress worked to complete electricity's reach into rural America. The Rural Electrification Act of 1936[59] accelerated the development of consumer-owned rural electric cooperatives to provide service in areas "the 'market' would avoid or poorly serve."[60] With the most dramatic growth in the period between 1936 and 1946, electric cooperatives proliferated, and by the early 1950s, according to the National Rural Electric Cooperative Association (NRECA), "90% of U.S. farms had electricity."[61] No longer a luxury of urban environments, access to electric power had become a common expectation, a basic need.

Among the growing pains of initial electrification, David Nye recounts, nearly "every major city at one time or another experienced an election campaign that focused on the question" of public versus private power.[62] According to estimates, there were "approximately seventy-five municipalizations of investor-owned utility franchises during the three decades of the 1960s, the 1970s, and the 1980s."[63] Interest in public ownership and the city utility model has tended to surge at transitional moments within the industry. For example, IOU rate hikes associated with shifting economics of nuclear power plant projects in the late 1970s and early 1980s spurred local governments to consider the city utility model as

52 Securities Exchange Act of 1934, Pub. L. No. 73-291, 48 Stat. 881 (codified as amended at 15 U.S.C. §§ 78a– 78pp (2012)).

53 Federal Power Act of 1935, U.S.C. §§ 791– 828(c).

54 Public Utility Holding Company Act of 1935, Pub. L. No. 74-333, 49 Stat. 803–38 (repealed 2005).

55 *See id.* § 1 (explaining that one purpose of the act is to prevent abuse of holding companies by utilities).

56 *See, e.g.*, Pub. Citizen, *Public Utility Holding Company Act (PUHCA)*, http://www.citizen.org/cmep/energy_enviro_nuclear/electricity/deregulation/puhca/ (last visited Feb. 6, 2016).

57 RUDOLPH & RIDLEY, *supra* note 34, at 79. For an account of the political context for the PUHCA's enactment, see *id.* at 76–79.

58 Patterson & Clamp, *supra* note 30, at 93.

59 7 U.S.C. §§ 901–950bb-1 (2012).

60 JOHN E. KWOKA, JR., POWER STRUCTURE: OWNERSHIP, INTEGRATION, AND COMPETITION IN THE U.S. ELECTRICITY INDUSTRY 12 (1996).

61 Nat'l Rural Elec. Coop. Ass'n, *Electric Cooperative Growth 1914–Present*, http://www.nreca.coop/wp-content/plugins/nreca-interactive-maps/coop-growth/index.html (last visited Feb. 6, 2016) (interactive map).

62 NYE, *supra* note 32, at 178–79.

63 STEVE FERREY, 2 L. OF INDEP. POWER § 10:19 (2015).

residents balked at paying a premium for failed ventures.[64] According to utility economist John Kwoka's research, the period between 1980 and 1994 saw thirty-three new publicly-owned utilities formed, with seventeen of those being community-driven conversions to public ownership.[65] In addition, he observed, "more than [fifty] localities contracted for feasibility studies" for municipalization in 1989 and "[twenty-five] communities" were "actively pursuing conversion" in 1995.[66] Conversions can shift either direction, however, and in the same period Kwoka found fifty-six public systems "disappeared" to privatization.[67] Finding incomplete conversions difficult to track, Kwoka concluded "at any point in time, many more privatizations and municipalizations may be under active consideration."[68]

Utility restructuring in the 1990s was another major transition within the industry that, like others before, challenged assumptions about public and private utilities. The longstanding premise that electricity was a natural monopoly began to erode as it became clear that competition could exist among generators of electricity. Restructuring the industry to foster competition became the theme of the decade, with the promise of consumer savings and industry efficiency.[69] In the early-1990s, states began to embark on restructuring initiatives, encouraging utilities to compete for retail customers, and the federal Energy Policy Act of 1992[70] promoted competition in federally-regulated wholesale markets.[71] This transition, according to former FERC Commissioner Suedeen Kelley, saw "at least 33 cities . . . seriously consider electric municipalization" to secure newly available low-cost wholesale power.[72] Empirical research reflects fairly consistently that POUs charge a significantly lower average price.[73] In his study of utility structure, John Kwoka surmises this may stem in part from fundamental differences between the "perspectives and motivations" of IOUs and POUs that are "operated and controlled by citizens of the community which each serves, individuals who view their roles in the

64 RUDOLPH & RIDLEY, *supra* note 34, at 94.

65 KWOKA, *supra* note 60, at 127.

66 *Id.* at 133.

67 *Id.* at 132.

68 *Id.* at 133.

69 SCOTT RIDLEY, DECADE OF UPHEAVAL: U.S. ELECTRICITY MARKETS IN TRANSITION 1997–2006. at v–vi (2007).

70 Pub. L. No. 102-486, 106 Stat. 2776 (1992).

71 For a resource describing this process from the American Public Power Association perspective, see generally SCOTT RIDLEY, *supra* note 69.

72 Suedeen G. Kelly, *Municipalization of Electricity: The Allure of Lower Rates for Bright Lights in Big Cities*, 37 NAT. RESOURCES J. 43, 43 (1997) (on restructuring as impetus for new municipalization efforts). At the time of publication, Ms. Kelly was on the faculty of the University of New Mexico School of Law. *See also* Michael J. Doane & Daniel F. Spulber, *Municipalization: Opportunism and Bypass in Electric Power*, 18 ENERGY L.J. 333, 333 (1997) (recounting 40 municipalization efforts across 17 states in the 1990s).

73 KWOKA, *supra* note 60, at 16; *see also* John E. Kwoka, Jr., *Governance Alternatives and Pricing in the U.S. Electric Power Industry*, 18 J.L. ECON. & ORG. 278, 279 (2002) (concluding based on pricing analysis that there is "a substantial and significant difference in system price between publicly and privately owned utilities, with public systems charging lower prices").

context of very local needs."[74] POUs also have lower costs—5.5% lower overall—than comparable IOUs.[75] Rates for consumers are estimated to be even lower.[76] The benefit of these savings flows mostly to residential customers who, according to Kwoka's research, are the "primary beneficiaries of public ownership."[77]

More change came in 1996 with FERC's landmark Order 888 policy of "open access" to transmission systems for independent electricity generators and wholesale purchasers.[78] Open access expanded options for city utilities to reach wholesale suppliers, after struggling to secure access and fair rates over investor-owned transmission lines for wholesale transactions with generators.[79] This problem was famously captured by the facts that gave rise to *Otter Tail Power Co. v. United States*,[80] a well-known antitrust case involving a city and its IOU.[81] After the expiration of its franchise with Otter Tail Power, the City of Elbow Lake, Minnesota, decided not to renew and sought instead to start its own city utility.[82] Otter Tail blocked the effort by refusing to sell wholesale power to the city and refusing to wheel power from alternative suppliers.[83] At the time, the FPA did not afford any protection to cities like Elbow Lake, and the Supreme Court held Otter Tail violated federal antitrust laws.[84] With open access, however, came other aspects of the transition to competitive wholesale markets, such as the emergence of regional transmission organizations (RTOs) and auction and market-based pricing, which have strained city utilities.[85] The American Public Power Association (APPA) has been a vocal critic of FERC's wholesale market development approach, arguing that cost

74 KWOKA, *supra* note 60, at 20.

75 *Id.* at 140.

76 Large Pub. Power Council, *Benefits*, http://www.lppc.org/public-power/benefits (last visited Feb. 6, 2016) (according to the Large Public Power Council, "[c]ustomers served by LPPC members pay on average 10 percent less per kWh than the national average").

77 KWOKA, *supra* note 60, at 11.

78 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*, 75 F.E.R.C. ¶ 61,080, 61 Fed. Reg. 21,540 (1996).

79 *See* RIDLEY, *supra* note 69, at 2. Although Order No. 888 required mandatory open transmission access by all transmitting utilities, a reciprocity provision extended open access to city, cooperative, and federal utilities, which are otherwise non-jurisdictional entities under the FPA. *See* FED. ENERGY REGULATORY COMM'N, ENERGY PRIMER 39 (2015), *available at* http://www.ferc.gov/market-oversight/guide/energy-primer.pdf.

80 410 U.S. 366 (1973).

81 *Id.* at 368.

82 *Id.* at 371.

83 *Id.*

84 *Id.* at 375, 377.

85 *See, e.g.*, John E. Kwoka, Jr., *Twenty-Five Years of Deregulation: Lessons for Electric Power*, 33 LOY. U. CHI. L.J. 885, 899–900 (2002) (observing electricity deregulation had not resulted in reduced costs and prices); Walter R. Hall II et al., *History, Objectives, and Mechanics of Competitive Electricity Markets*, *in* CAPTURING THE POWER OF ELECTRIC RESTRUCTURING, at 3–4 (Joey Lee Miranda ed., 2009) ("[A] number of market participants . . . including state regulators, public power systems, industrial customers, and consumer advocates (indeed, much of the spectrum of customer interest groups), have challenged FERC's belief that substantial cost savings or other benefits arise from current market structures.").

savings have not been realized and urging consideration of an alternative "competitive market plan."[86] Restructuring initiatives at the state level yielded mixed results, and early enthusiasm for the concept weakened substantially as the nation watched California's program open, explode, and shut down in three short years from gross market manipulation by Enron and other traders.[87] This reignited cities' interest in public power once again as they sought ways to normalize residents' electricity rates.[88] Today, fifteen states operate with retail choice for residential electricity customers, but virtually all are served by IOUs.[89] City utilities were allowed to "opt out" of retail restructuring (and most did) to continue serving their customers with power.[90]

The APPA counts fifty-nine public power utilities formed concurrent with the transitions of the last thirty years.[91] Through the industry's expansion and evolution over the twentieth century, the city utility has persisted as a viable and beneficial model for many communities. Yet, as the next Section elaborates, the early dominance of private utility companies in the electric power industry has remained constant despite periodic trends toward public ownership.

B. Cities and the Modern Electricity Landscape

POUs comprise over sixty percent of U.S. electricity providers, but IOUs provide over sixty percent of electricity to U.S. consumers.[92] Though far less numerous—there are 189 IOUs compared with over 2,000 municipal utilities in the United States, operating in almost every state—the IOU

86 *See* AM. PUB. POWER ASS'N, APPA'S COMPETITIVE MARKET PLAN: 2011 UPDATE, A ROADMAP FOR REFORMING WHOLESALE ELECTRICITY MARKETS 2, 5–6 (2011). On the need for reform of wholesale markets to advance the low-carbon transition, see Boyd, *supra* note 18, at 1661–74, 1683–99.

87 HALL II ET AL., *supra* note 85, at 42–43; *See also* David B. Spence, *The Politics of Electricity Restructuring: Theory vs. Practice*, 40 WAKE FOREST L. Rev. 417, 417–18 (2005) (addressing restructuring and its mixed results); Timothy P. Duane, *Regulation's Rationale: Learning from the California Energy Crisis*, 19 YALE J. ON REG. 471, 472–74 (2002) (discussing factors affecting California's restructuring debacle).

88 *See, e.g.*, Shelley Ross Saxer, *Government Power Unleashed: Using Eminent Domain to Acquire a Public Utility or Other Ongoing Enterprise*, 38 IND. L. REV. 55, 55, 65, 69–70 (2005) (exploring municipal eminent domain power in the electric utility context in light of observation that "[m]unicipalities throughout the United States are forming public utility districts and attempting to negotiate purchases of privately-owned utility companies, with the power of eminent domain supplying a fallback position if negotiations fail").

89 AM. PUB. POWER ASS'N, 2015–16 ANNUAL DIRECTORY & STATISTICAL REPORT 55–57 (2015), *available at* http://www.publicpower.org/files/PDFs/PaymentsandContributionsbyPublicPowerDistributionSystems.pdf.

90 AM. PUB. POWER ASS'N, WHOLESALE ELECTRICITY MARKETS (2015), *available at* http://publicpower.org/files/PDFs/WholesaleElectricityMarkets.pdf.

91 AM. PUB. POWER ASS'N, Q&A FOR COMMUNITIES CONSIDERING PUBLIC POWER (2013), *available at* http://www.publicpower.org/files/PDFs/Forming_QA_2013.pdf.

92 AM. PUB. POWER ASS'N, *supra* note 89, at 26.

dominates the modern, highly centralized electric power sector.[93] Indeed, POUs in the United States mostly serve smaller population centers, which explains their high numbers relative to the low percentage of U.S. customers served. As of 2012, only around thirty of the 2,000-plus city utilities served 100,000 people or more, and only six of those exceed 500,000 customers.[94] Los Angeles, Austin, Seattle, San Antonio, Sacramento, and Long Island are notable examples of large public systems.[95] Two-thirds of municipal utilities serve fewer than 4,000 customers.[96] By a large margin, IOUs provide the largest share of electricity to America's cities.

In most states, IOUs are still vertically integrated—that is, the private utility company controls the generation, transmission, and local distribution of electric power. In contrast, modern public power is characterized by a predominance of distribution-only utilities.[97] Under this model, a city sells electricity to consumers at retail and owns local electricity distribution facilities, but it does not own or operate high-voltage transmission lines or power plants.[98] These cities typically rely on the wholesale electricity market or long-term contracts with independent power generators for the electricity they offer residents.[99] Alternatively, they may purchase electric power through joint action agencies, through which multiple distribution-only city utilities can achieve economies of scale.[100]

It comes as no surprise, then, that city utilities own very little electric generating capacity—only ten percent of the electric generating capacity in the United States—and it is consolidated among only one-third of these entities.[101] This distinction is reflected in the organizations that advocate on behalf of public power entities. While the APPA advocates for all public power broadly, interests of the biggest city utilities are represented separately by the Large Public Power Council (LPPC), whose members serve thirty million people and are more likely to be vertically integrated like the majority of IOUs.[102] Most electric power generation is owned by IOUs (39%)

93 Publicly owned utilities operate in every state except Hawaii. *See* Diane Moody et al., *Public Power by the Numbers*, 26 ELECTRICITY J., July 2013, at 85–87 (noting that the median customer size of a public utility is 1,975 and due to their "comparatively small size," public power utilities often do not generate their own power). *See also* AM. PUB. POWER ASS'N, *supra* note 89, at 26 (noting that while IOUs only represent 5.7% of the electricity providers, IOUs serve more than 68% of American consumers).

94 AM. PUB. POWER ASS'N, *supra* note 89, at 36.

95 *Id.*

96 *Id.* at 44.

97 THE REGULATORY ASSISTANCE PROJECT, ELECTRICITY REGULATION IN THE US: A GUIDE 10 (2011), *available at* http://www.raponline.org/docs/RAP_Lazar_ElectricityRegulationInTheUS_Guide_2011_03.pdf.

98 *Id.*

99 *Id.*

100 *Id.* at 13.

101 AM. PUB. POWER ASS'N, *supra* note 89, at 28.

102 The membership of the Large Public Power Council includes the 25 largest POUs, which collectively "own and operate more than 71,000 megawatts of generation capacity and over 30,000 circuit miles of high voltage transmission lines." Large Pub. Power Council, *Introduction*, http://www.lppc.org/about-lppc/introduction/ (last visited Feb. 6, 2016).

and nonutility generators selling wholesale power (40%), and the majority of U.S. cities rely on these power plants for electricity.[103] With most of these power plants burning coal and natural gas, even cities making strides to curb emissions from buildings and transportation are often stuck with electricity from fossil fuel.[104]

III. CITIES' ELECTRIC POWER IN LEGAL CONTEXT

This Part provides an overview of the legal context for cities' electric power, with a focus on aspects relevant to the low-carbon transition. City utilities operate in a legal environment characterized by intertwining jurisdiction across federal, state, and local law. This Part first provides an overview of these legal frameworks, unique to public electric power, to show how city utilities are often subject to differential treatment from private utilities—with mixed implications for the low-carbon shift. This Part then turns to the legal context for electric power in cities that do not operate a utility. These cities typically secure electricity service for municipal use, residents, and businesses through an IOU franchise agreement, but this context depends in part on the traditional or restructured status of retail electricity in the state.

A. City Utilities: The Public Power Model

Unique legal frameworks have long applied to city utilities in the United States. The origins of federal energy law reflect early differentiation between private and publicly-owned utilities in connection with electricity and water resources—namely, electricity for irrigation and the development of hydroelectric power, the first major source of renewable energy.

This legal differentiation initially expressed a distinct preference for city utilities. In 1906, President Theodore Roosevelt signed the Town Sites and Power Development Act,[105] generally regarded as the federal government's first foray into regulating electric power.[106] The Act gave local governments priority access to federally-generated electric power by authorizing the Secretary of the Interior, "whenever a development of power is necessary for the irrigation of lands . . . to lease for a period not exceeding ten years, *giving preference to municipal purposes*, any surplus power or power privilege."[107] Some have speculated that forest conservationist Gifford

103 AM. PUB. POWER ASS'N, *supra* note 89, at 26–28.

104 *Id.* at 30 (indicating that coal and gas together account for 78.2% of IOU electricity generating capacity).

105 Town Sites and Power Development Act, ch. 1631, 34 Stat. 116 (1906) (codified at 43 U.S.C. § 561).

106 U.S. GEN. ACCOUNTING OFFICE, FEDERAL POWER: THE EVOLUTION OF PREFERENCE IN MARKETING FEDERAL POWER 3 (2001), *available at* http://www.gao.gov/assets/240/231087.pdf.

107 Town Sites and Power Development Act, ch. 1631, 34 Stat. 116 (1906) (codified at 43 U.S.C. § 561) (emphasis added).

Pinchot may have been the force behind the preference provision's inclusion in the statute.[108] Whatever its source, this preference for public entities, replicated across myriad federal statutes in the decades to follow, came to be seen as the "Magna Carta of public power."[109] So-called "preference power"—surplus electric power marketed through federal power administrations with priority for public entities—remains an important source of electricity for over half of municipal utilities and cooperatives, spanning forty-one states.[110]

Congress reiterated its preference for public entities in the Federal Water Power Act of 1920,[111] which also established the Federal Power Commission (FPC), FERC's predecessor.[112] The modern FERC, though an independent commission, is nonetheless a "creature of statute," having "no constitutional or common law existence or authority, but only those authorities conferred upon it by Congress."[113] The Act consolidated hydroelectric licensing, which had previously spanned multiple federal agencies, depending on a project's location, assigning FERC exclusive licensing jurisdiction.[114] To guide FERC's licensing decisions, the new law created a clear hierarchy of preference among utilities seeking to develop hydroelectric power on the nation's waters. Section 7(a) provided for "preference to applications . . . by States and municipalities" for preliminary permits and licenses issued under the Act, "provided the plans . . . are equally well-adapted . . . to conserve and utilize in the public interest the water resources of the region."[115] Under section 3(7) a "municipality" is "a city, county . . . or other political subdivision or agency of a State competent under the laws thereof to carry on the business of developing, transmitting, utilizing, or distributing power," and municipalities are expressly excluded

108 *See* Ben Tansey, *The Mystery of Preference*, PUB. POWER, Sept.–Oct. 2006, at 20 (citing to comments in a speech at a 1956 Water Resources Conference commemorating 50 years of municipal preference). Pinchot later became Governor of Pennsylvania and was a proponent of the so-called "Giant Power" concept in the 1960s. *Id.* (reporting that "[a] decade later, Pennsylvania Gov. Pinchot's Giant Power Program was predicated on the need for public ownership and control of the networks of power, lest the 'enchanted evil spider' of a centralized financial and business system 'spread his web over the whole of the United States'"). *See also* 106 CONG. REC. A1302 (daily ed. Feb. 16, 1960) (statement of Rep. Johnson (D–CO)) (encouraging the federal government to participate in regional big power-supply cooperatives).

109 Ben Tansey, *Celebrating 100 Years of Preference*, PUB. POWER, Sept.–Oct. 2006, http://www.publicpower.org/Media/magazine/ArticleDetail.cfm?ItemNumber=17438 (last vistied Feb. 6, 2016) (quoting former APPA executive director Alex Radin).

110 *Id.*; *see also* Clinton A. Vince & Nancy A. Wodka, *Recent Legal Developments and Legislative Trends in Federal Preference Power Marketing*, 7 ENERGY L.J. 1, 5–14 (1986) (providing background discussion on preference power provisions in the major federal power marketing administrations).

111 Federal Water Power Act of 1920, ch. 285, §1, 41 Stat. 1067 (1920).

112 *Id.*

113 Atl. City Elec. Co. v. Fed. Energy Regulatory Comm'n, 295 F.3d 1, 8 (D.C. Cir. 2002).

114 *See* GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, 4 PUB. NAT. RESOURCES L. § 37:2 (2d ed.) (2015); CHRISTINE KLEIN & SANDRA B. ZELLMER, MISSISSIPPI RIVER TRAGEDIES: A CENTURY OF UNNATURAL DISASTER 66 (2014) (noting early fragmentation and competition among federal agencies regarding water resources).

115 Federal Water Power Act of 1920, § 7(a) (codified at 16 U.S.C. 800 (2012)).

from the definition of "corporation."[116] These provisions solidified city utilities' priority access to affordable and renewable energy.

The 1935 FPA built on the 1920 statute, expanded FERC's responsibilities, and remains the foundation of modern federal regulation in the electricity sector.[117] Congress enacted Subchapter II of the FPA in response to increasingly interstate characteristics of the electric power industry following the Supreme Court's 1927 dormant commerce clause ruling in *Public Utility Comm'n of Rhode Island v. Attleboro Steam & Electric Co*.[118] There, the Court rejected state regulation of rates for electricity "delivered by the Narragansett Company at the state line between Rhode Island and Massachusetts and carried over connecting transmission lines to the station of the Attleboro Company in Massachusetts."[119] The Court reasoned that the interstate rate could "not be subject to regulation by either of the two states," although it could be regulated "by the exercise of the power vested in Congress."[120] The 1935 FPA amendments closed the "*Attleboro* gap" by authorizing federal regulation of the interstate transactions that the Court ruled off-limits for states.[121]

Developing out of this historical context, FERC's modern authority rests on the obligation to regulate "the transmission of electric energy in interstate commerce" and "the sale of electric energy at wholesale in interstate commerce."[122] FERC is also empowered to regulate certain economic and infrastructure aspects of the energy sector.[123] This span of regulatory authority affects the various actors in the electricity space in a range of ways. The FPA defines "public utility" as "any person who owns or operates facilities subject to the jurisdiction of" FERC.[124] Yet the contours of FERC's jurisdiction over a utility depends on how it operates within the electricity industry, how it is classified under the statute, and whether it qualifies for statutory exemptions.

This is perhaps best demonstrated with reference to city utilities, which are subject to far less direct regulation by FERC than IOUs. Most city utilities operate as distribution-only utilities: they sell electricity at retail

116 *Id.* § 3(a) (codified at 16 U.S.C. § 796(7) (2012)).

117 Hydroelectric licensing provisions originating in the 1920 Act are now Subchapter I of the FPA. 16 U.S.C. §§ 791a–823d (2012).

118 273 U.S. 83 (1927).

119 *Id.* at 84.

120 *Id.* at 90.

121 New York v. Fed. Energy Regulatory Comm'n, 535 U.S. 1, 20 (2002).

122 16 U.S.C. § 824(b)(1) (2012).

123 *See generally* FED. ENERGY REGULATORY COMM'N, THE STRATEGIC PLAN FY 2009–14, at 20, 22 (2013), *available at* http://www.ferc.gov/about/strat-docs/FY-09-14-strat-plan-print.pdf. Economic regulation includes FERC authority over transmission and wholesale sales of electricity in interstate commerce, but also transmission and sale of natural gas for resale in interstate commerce and transmission of oil by pipeline in interstate commerce. *Id.* at 47. Infrastructure regulation includes licensing and inspecting hydropower projects, as well as electricity policy initiatives and matters related to natural gas, such as permitting, siting, and abandonment of interstate natural gas pipelines. *Id.* FERC also performs oversight for environmental aspects of natural gas and hydropower projects. *Id.*

124 16 U.S.C. § 824(e) (2012).

directly to consumers, not wholesale, and thus the core business of many POUs falls outside FERC's jurisdiction.[125] But the exercise of FERC's jurisdiction nonetheless significantly affects city utilities. FERC policy affecting wholesale rates, for example, is critically important to POUs, as some rely entirely on the wholesale markets, and nearly all rely on them to some extent.[126]

Key definitional distinctions further inform how the FPA applies to a utility. The FPA refines the definition of "public utility" with more specific adjacent terms relevant to jurisdiction in different contexts. The key term "electric utility," the primary subject of subchapter II regulation, is defined as "a person or Federal or State agency . . . [including any municipality] that sells electric energy."[127] Section 201(f) then expressly exempts from subchapter II regulation the United States, states, political subdivisions of a state, and electric cooperatives that receive "financing under the Rural Electrification Act of 1936" or sell "less than 4,000,000 megawatt hours of electricity per year," with a caveat that the exemption applies "*unless* such provision makes specific reference thereto."[128]

As the Ninth Circuit observed, "[t]he sweep of this exemption is huge."[129] When public entities sell wholesale power, for example, they are exempt from FERC's general regulatory authority over wholesale power transactions.[130] Likewise, FERC's authority to order a utility to pay consumer refunds depends on its public/private status. The FPA empowers FERC to order public utilities, as defined in the statute, to pay refunds under certain circumstances, but this authority does not extend to FPA non-public utilities; that is, FERC cannot order city utilities to issue a refund.[131]

Yet the contours of the exemption are less clear than they may seem. In *Transmission Agency of Northern California v. FERC*,[132] for example, the D.C. Circuit explained that "jurisdictional and non-jurisdictional entities are regularly integrated co-participants in modern power markets," and thus

125 THE REGULATORY ASSISTANCE PROJECT, *supra* note 97, at 13.

126 AM. PUB. POWER ASS'N, WHOLESALE ELECTRICITY MARKETS, 1 (2009), *available at* http://www.publicpower.org/files/pdfs/23%20wholesale%20markets.pdf.

127 FPA § 3(22), 16 U.S.C. § 796(22) (2012). *See also* Bonneville Power Admin. v. Fed. Energy Regulatory Comm'n, 422 F.3d 908, 916 (9th Cir. 2005).

128 FPA § 201(f), 16 U.S.C. § 824(f) (2012) (emphasis added). Limiting the exemption to Subchapter II preserves, for example, federal licensing requirements for hydroelectric projects under Subchapter I. 16 U.S.C. § 803 (2012).

129 *Bonneville Power Admin.*, 422 F.3d at 915.

130 *See* REGULATORY ASSISTANCE PROJECT, *supra* note 97, at 13. Wholesale power sales to municipal utilities and cooperatives are subject to FERC's FPA jurisdiction. *See, e.g.*, Pub. Serv. Co. of Indiana, Inc. v. Fed. Power Comm'n, 375 F.2d 100, 104 (7th Cir. 1967).

131 The FPA authorizes FERC to order "[a] public utility to make refunds of any amounts paid . . . in excess of those which would have been paid under the just and reasonable rate." FPA § 206(b), 16 U.S.C. § 824e(b). The subsection does not apply to a municipality because it is not an FPA "public utility." Transmission Agency of N. Cal. v. Fed. Energy Regulatory Comm'n, 495 F.3d 663, 674 (D.C. Cir. 2007) (*Transmission Agency of N. Cal. I*). *See also Bonneville Power Admin.*, 422 F.3d at 914–17 (holding refund authority did not apply to Bonneville Power Administration due to its exclusion from the FPA definition of "public utility").

132 628 F.3d 538 (9th Cir. 2010).

"the mere presence of a governmental entity" did not defeat the Commission's assertion of jurisdiction over mixed transactions.[133] The court explained, FERC "may analyze and consider the rates of non-jurisdictional utilities to the extent that those rates affect jurisdictional transactions."[134] Similarly, although FPA section 201(b) indicates FERC does not have jurisdiction over "local distribution facilities,"[135] FERC has interpreted this provision as authorizing jurisdiction over an entire transmission transaction that involves both transmission and distribution facilities in the same transaction.[136] In other examples, courts have upheld FERC's regulations that interpret an FPA licensing fee exemption for utilities operating "without profit" in the balance-sheet sense.[137] Thus, the exemption does not apply to publicly-owned utilities solely on the basis of operating as a non-profit entity. It is likewise unclear whether FERC's authority over mergers under the "merge or consolidate" clause of FPA section 203(a)(1)(B) applies to mergers involving facilities owned by entities not subject to FERC jurisdiction, such as city utilities.[138]

Moreover, the caveat at the end of the broad exemption respects a series of specific provisions that nonetheless "shall apply" to otherwise exempt section 201(f) entities.[139] These provisions are construed narrowly,

133 *Id.* at 544–45.

134 *Id.* at 545 (quoting *Transmission Agency of N. Cal. I*, 495 F.3d at 671).

135 16 U.S.C. § 824(b)(1) (2015).

136 *See* REINIER H.J.H. LOCK & MARLENE L. STEIN, 3-81 ENERGY LAW AND TRANSACTIONS § 81.04 16 (2015). "However, the FERC accepted a principle that when 'unusual circumstances . . . *create a strong local interest*' in the transaction, the FERC may, on a case-by-case basis, pay strong deference to rate determinations for such transactions by a state commission (in that case, the New York Public Service Commission), 'absent a showing of abuse.'" *Id.* (emphasis in original).

137 *See, e.g.*, Alaska Energy Auth. v. Fed. Energy Regulatory Comm'n, 928 F.2d 1181, 1182–83 (D.C. Cir. 1991) (affirming FERC in denying request from a POU for exemption from annual license fees applicable to a project "designed to generate low-cost electricity for transmission to remote communities in . . . Alaska," under FPA not-for-profit exception); City of Oswego v. Fed. Energy Regulatory Comm'n, 97 F.3d 1490, 1496 (D.C. 1996) (deferring to FERC regulations which define the term "profit" in a balance sheet sense).

138 16 U.S.C. § 824b(a)(1)(B) (2012); Hugh E. Hilliard, *FERC, May I? When is FERC Authorization Needed for Transfers of Public Utility Assets and Equity Interests in Public Utilities?*, 34 ENERGY L.J. 151, 172 (2013) (discussing FPA § 203(a)(1)(B)). Hilliard contrasts section 203 prior to the Energy Policy Act of 2005, which FERC interpreted as requiring it to authorize any merger, including those that involve facilities that, "except for ownership, would be subject to the Commission's jurisdiction," with regulations after the 2005 Act, in which this language was omitted. *Id.*

139 FPA section 201(b)(2) provides:

> Notwithstanding section 201(f), the provisions of sections 203(a)(2), 206(e), 210, 211, 211A, 212, 215, 216, 217, 218, 219, 220, 221, and 222 shall apply to the entities described in such provisions, and such entities shall be subject to the jurisdiction of the Commission for purposes of carrying out such provisions and for purposes of applying the enforcement authorities of this Act with respect to such provisions.

16 U.S.C. § 824(b)(2) (2012).

and do not subject these utilities to FERC's general FPA jurisdiction.[140] The nonexempt provisions extend FERC's jurisdiction in several discrete areas to include certain POUs. One example is regulation of utility compliance with mandatory reliability standards under FPA section 215.[141] Both private and publicly-owned utilities, even those typically exempt, may be subject to reliability standards if they are users, owners, or operators of the "bulk power system."[142] Reliability standards, developed by the North American Electric Reliability Corporation, are subject to FERC approval that they are "just, reasonable, not unduly discriminatory or preferential, and in the public interest."[143] Grid interconnection entails similar complexity. Under FPA section 210, a utility may request a FERC order for interconnection to transmission lines.[144] Section 211, likewise, allows utilities to request a FERC "wheeling" order for transmitting wholesale electric power over transmission lines.[145] This open access mandate is designed to ensure that a utility that owns transmission infrastructure responds to requests for transmission service by providing access on essentially the same terms as apply for its own use. The Energy Policy Act of 2005 added FPA section 211A, authorizing FERC to require utilities otherwise excluded from FERC jurisdiction under FPA section 201(f), such as city utilities and cooperatives, to provide open access over their transmission facilities if they sell more than four million megawatt hours of electricity per year.[146] Section 211A does not extend to distribution facilities owned by section 201(f) entities.[147]

In sum, city utilities encounter direct and indirect FPA regulation by FERC. FERC's jurisdiction over hydropower development under FPA subchapter I extends to all utilities, with preferential treatment toward public entities in some respects. FERC's Subchapter II jurisdiction is more limited for city utilities than for IOUs. The FPA's broad exemption for public

140 Bonneville Power Admin. v. Fed. Energy Regulatory Comm'n, 422 F.3d 908, 916 (9th Cir. 2005). FPA section 201(b)(2) provides that the extension of FERC jurisdiction to public entities notwithstanding the 201(f) exemption "shall not make an electric utility or other entity subject to the jurisdiction of the Commission for any purposes other than the purposes specified" in the enumerated applicable provisions. 16 U.S.C. § 824(b)(2) (2012).

141 16 U.S.C. § 824o (2012).

142 "[B]ulk-power system" includes "(A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1) (2012). *See also* DAVID J. MUCHOW & WILLIAM A. MOGEL, 1-59 ENERGY LAW AND TRANSACTIONS § 59.12 (2015) (describing import of this provision, made part of the FPA via amendment by the Energy Policy Act of 2005). Note distribution is not included in the definition above, thus limiting application of this section with respect to distribution-only utilities. 16 U.S.C. § 824o(a) (2012).

143 16 U.S.C. § 824o(d)(2) (2012).

144 16 U.S.C. § 824i (2012).

145 *Id.* § 824j (2012). Wheeling is the "transmission of electricity by an entity that does not own or directly use the power it is transmitting." Fed. Energy Regulatory Comm'n, *Glossary*, http://www.ferc.gov/resources/glossary.asp#W (last visited Feb. 6, 2016).

146 16 U.S.C. § 824j–1 (2012); *see also* MUCHOW & MOGEL, *supra* note 142, at § 59.12(4)(a) (explaining that section 211A was added in response to claims that the effectiveness of mandates were hampered by lack of open access by non-regulated transmitting utilities).

147 16 U.S.C. § 824a (2012).

entities and cooperatives interweaves with context-specific retractions of the exemption's effect.

Diverging from the FPA's approach, the Public Utility Regulatory Policies Act (PURPA),[148] generally applies to both city and investor-owned utilities.[149] This statute, enacted in 1978, promotes decentralized energy production by encouraging small-scale generation of electricity using renewable resources.[150] Section 210 of PURPA imposes an obligation on any "electric utility"—defined broadly as "any person, state agency, or federal agency, which sells electric energy"—to purchase power at avoided-cost rates from "qualifying cogeneration and small power production facilities" (Qualifying Facilities or QFs).[151] PURPA's purchase requirement and rate restrictions apply to private and public power, and FERC is responsible for enforcement.[152] However, PURPA narrows its application to utilities with total annual retail sales greater than 400 million kilowatt-hours, differentiating not on the basis of public or private status, but on size, thereby exempting small utilities, which are often publicly owned.[153]

For other purposes, however, the statute differentiates between nonregulated and state-regulated electric utilities. This can be seen, for example, in PURPA's standards for electric utilities, which include rate-related standards as well as others pertinent to renewable energy.[154] The statute provides that "each state regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated electric utility" shall consider each standard set out in PURPA and make a determination whether or not to implement.[155] In this context, city utilities and cooperatives are "nonregulated" because they are not typically subject to state ratemaking authority like IOUs. Thus, while the state PUC considers each PURPA standard for implementation across IOUS serving in the state, city utilities consider them independently

In contrast to the FPA and PURPA's emphasis on utility structure, federal environmental laws affecting the power sector do not follow the

148 Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (codified throughout 16 U.S.C. §§ 791a–825r, 2601–2645; 31 U.S.C. § 9701; 42 U.S.C. §§ 7101–7352 (2012)).

149 *Id.*

150 For a discussion of PURPA in the context of modern public power, see Donna M. Attanasio, *PURPA's Public Power Impact (And What to Do About It)*, GEO. WASH. J. ENERGY & ENVTL. L., Summer 2014, at 1.

151 PURPA § 3(4), 16 U.S.C. § 2602(4) (2012); Attanasio, *supra* note 150, at 1–2.

152 Attanasio, *supra* note 150, at 1–2; *see also* AM. PUB. POWER ASS'N, DISTRIBUTED GENERATION: AN OVERVIEW OF RECENT POLICY DEVELOPMENTS 5 (2013) (noting FERC's ability to set mandates and restrictions for rates under section 210 of PURPA apply to all electric facilities).

153 16 U.S.C. § 824j–1 (2012).

154 *See* MUCHOW & MOGEL, *supra* note 142, at § 59.12(2) (describing the reliability standards exercised under FERC's jurisdiction).

155 KENNETH ROSE & KARL MEEUSEN, REFERENCE MANUAL AND PROCEDURES FOR IMPLEMENTATION OF THE "PURPA STANDARDS" IN THE ENERGY POLICY ACT OF 2005 8 (2006), *available at* http://energy.gov/sites/prod/files/Manual%20for%20Implementation%20of%20PURPA%20Standards%20in%20EPACT%202005%20%28March%202006%29.pdf (discussing PURPA section 111(a)).

same patterns. Rather, they apply to utilities of all kinds, regardless of public or private status, to the extent they operate facilities subject to a given statute.[156] The Clean Air Act,[157] for example, differentiates on the basis of size, facility construction or modification, and emissions volume thresholds to trigger emissions control requirements for stationary sources of air pollution.[158] The Obama Administration's second term has been marked by concerted use of Clean Air Act authority to reform the nation's electricity sector by limiting greenhouse gases and other toxic emissions from power plants.[159] In 2012, EPA adopted the first nationwide standard for mercury and other toxic air pollutants from power plants,[160] and in 2014 the agency proposed a rule limiting carbon emissions for all new power plants.[161] In 2015, EPA finalized a controversial rule designed to cut carbon emissions from existing power plants through cooperative strategies to achieve federal targets tailored to individual states.[162]

Given the limited number of city utilities with generation capacity, the effect of environmental regulation is largely indirect; while cities may not own a power plant facing more stringent Clean Air Act regulations, they may purchase power from such a facility. Either way, these rules will have a significant impact. Similarly, recent rulemaking under the Resource Conservation and Recovery Act[163] regarding disposal of coal combustion residuals may affect city utilities directly or indirectly based on whether they

156 AM. PUB. POWER ASS'N, ENVIRONMENTAL REGULATORY CHALLENGES FACING PUBLIC POWER IN 2013 AND BEYOND 1 (2013).

157 42 U.S.C. §§ 7401–7671q (2012).

158 *Id.* § 7411 (permitting the Administrator to distinguish among classes, types, and sizes within categories of new sources to establish standards of performance); *id.* § 7469 (Prevention of Significant Deterioration); *id.* § 7412 (mandating the Administrator to promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air pollutants and permitting the administrator to distinguish among classes, types, and sizes of sources within a category or subcategory in establishing such standards).

159 *See* The White House, *Climate Change and President Obama's Action Plan*, https://www.whitehouse.gov/climate-change (last visited Feb. 6, 2016); Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,663 (Oct. 23, 2015) (codified at 40 C.F.R. pt. 60) (indicating that the Clean Power Plan was promulgated under Clean Air Act authority).

160 National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9,303, 9,304 (Feb. 16, 2012) (codified at 40 C.F.R. pts. 60, 63). This rule was upheld in the D.C. Circuit, White Stallion Energy Center LLC v. U.S. Envtl. Prot. Agency, 748 F.3d 1222 (2014), then reversed on appeal by the Supreme Court. Michigan v. U.S. Envtl. Prot. Agency, 135 S. Ct. 2699 (2015).

161 The rule was initially proposed in 2012. *See* Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 Fed. Reg. 22,392 (Apr. 13, 2012). However, after significant feedback from industry and the public, EPA withdrew the initial proposed rule and issued a new rule in 2014. *See* Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1,430 (Jan. 8, 2014).

162 Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (Oct. 23, 2015) (codified at 40 C.F.R. pt. 60).

163 Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901–6992k (2012).

own coal-fired power plants or buy from other utilities that do, rather than their public versus private status.[164] Cities served by IOUs can expect costs associated with compliance to be felt in the rates affecting their residents and businesses.

Turning from the federal to state level reveals similar modes of legal differentiation between public and private utilities under state law. State authority in the electric power sector is substantial and far reaching. Under the FPA, Congress delineated states' jurisdiction to preserve state control over power plants, transmission facilities for intrastate commerce, and local distribution lines.[165] State jurisdiction is typically exercised through a state public utility commission (PUC) that regulates the rates that public utilities charge retail customers for electricity service.[166] In general, however, although states typically retain constitutional authority to regulate municipal utilities, states excluded public power entities and cooperatives from the scope of PUC jurisdiction. This trend emerged early in the grid's development.[167] Although there are a few exceptions—a minority of states do regulate rates or do so in an oversight capacity limited to certain circumstances—typically it is the utility's governing body, the city council, or an independent utility board that has authority to set public power retail rates, not the state-level PUC.[168]

This limited regulation by states provides city utilities with regulatory autonomy and flexibility. Combined with their non-profit status—there is no rate of return to shareholders they have to maintain—city utilities enjoy potential for locally-determined changes and nimble experimentation with emerging policy models. In his account of the early experiments with energy conservation in the United States, historian Richard Hirsh describes how an Osage, Iowa municipal utility drew early accolades for its measures, noting

164 Final Rule: Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (Apr. 17, 2015). The possibility of treating coal combustion residuals as hazardous waste under RCRA was outlined in the proposed rule and resoundingly opposed by utilities. *See, e.g.*, LARGE PUB. POWER COUNCIL, PUBLIC COMMENT RE: PROPOSED RULE: HAZARDOUS AND SOLID WASTE MANAGEMENT; IDENTIFICATION AND LISTING OF SPECIAL WASTES; DISPOSAL OF COAL COMBUSTION RESIDUALS FROM ELECTRIC UTILITIES, 75 FED. REG. 35,128 (Nov. 19, 2010), *available at* http://www.lppc.org/wp-content/uploads/2013/02/Disposal-of-Coal-Combustions-Residuals-from-Electric-Utilities-Docket-November-19-2010.pdf (advocating against treatment as hazardous waste).

165 LOCK & STEIN, *supra* note 136, § 81.04(3).

166 States use different names for these commissions (*e.g.*, Maine Public Utility Commission, Florida Public Service Commission, Kansas Corporation Commission). *See generally*, National Association of Regulatory Utility Commissioners (NARUC), http://www.naruc.org (last visited Feb. 6, 2016).

167 *See* Comment, *Municipal Operation of Public Utilities*, 41 YALE L.J. 116, 121 (1931) (noting that "in a number of jurisdictions the legislatures have expressly excepted municipally owned utilities from the regulation of state commissions," but "the constitutional power of the state to control such utilities has been generally sustained by the courts" (citations omitted)).

168 *See generally* AM. PUB. POWER ASS'N, AUTHORITY OF STATE COMMISSIONS TO REGULATE RATES OF PUBLIC POWER UTILITIES (June 2014), *available at* http://www.publicpower.org/files/Resources/Rate_Regulation_of_PP_chart_412.pdf (differentiating between states that regulate public power rates in full, of which there are six, and those that regulate rates only for service offered outside municipal limits or only under certain conditions).

the flexibility that came from its core public power attribute: it "did not have the same incentives and disincentives as did investor-owned power companies."[169] Without shareholders or regulation from the state public service commission, writes Hirsch, Osage "could develop and implement innovative programs without obtaining permission to do so, and without providing elaborate justifications for every action," serving "only customers, who profited from cost-saving energy-efficiency measures."[170]

States have also differentiated between IOUs and city utilities in state laws promoting renewable energy. Renewable Portfolio Standards (RPS), also known as Renewable Energy Standards, are now enacted as mandates or goals in twenty-nine states.[171] Typically, an RPS requires that a percentage of electricity sold at retail derive from renewable resources, and the percentage usually increases over time.[172] For example, California's RPS mandates fifty percent renewable energy by 2030; Virginia has a fifteen percent goal by 2025.[173] RPSs have played a role in advancing renewable energy development across the United States, and yet in some states, these laws only apply to utilities subject to state regulation.[174] Given the limited PUC jurisdiction over public power in most states, city utilities are largely exempt from RPS mandates.[175] This may explain, in part, why public power entities and cooperatives have not ranked better than the rest of the industry in carbon intensity of electricity they sell.[176] According to the APPA, even where state requirements are not legally applicable, "public power generally meets or exceeds these requirements because their customers want more clean energy."[177] Still, Professor Elizabeth Wilson and others who have compared carbon footprints across utility structures argue renewable mandates should include city utilities and cooperatives, which have not "faced the same pressures as investor-owned utilities."[178]

A similar contrast exists in some state policies for net-metering distributed renewable energy. Net energy metering is a mandatory option for

169 RICHARD F. HIRSH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM 157–58 (1999).

170 *Id.*

171 Jocelyn Durkay, *State Renewable Portfolio Standards and Goals*, http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx (last visited Feb. 6, 2016).

172 *See* FERC, ENERGY PRIMER, *supra* note 79, at 51–52.

173 Durkay, *supra* note 171.

174 AM. PUB. POWER ASS'N, STATE RENEWABLE PORTFOLIO STANDARDS APPLICABLE TO PUBLIC POWER (2012), *available at* https://www.publicpower.org/files/PDFs/Public_Power_%26_Renewable_resources.pdf.

175 *Id.*

176 Miriam Fischlein et al., *Carbon Emissions and Management Scenarios for Consumer-Owned Utilities*, 12 ENVTL. SCIENCE & POL'Y 778, 788 (2009) (studying carbon emission of POUs and cooperatives together and estimating that the "[consumer-owned utility] sector's electricity sales are similar in carbon intensity to the U.S. average").

177 AM. PUB. POWER ASS'N, MEETING THE CHALLENGE: PUBLIC POWER'S COMMITMENT TO REDUCING GREENHOUSE GASES, *available at* https://www.publicpower.org/files/PDFs/CommitmenttoReducingGreenhouseGases.pdf.

178 Fischlein et al., *supra* note 176, at 788.

electricity customers in forty-four states, by which utilities give customers credit on their electricity bills for energy they generate on-site, such as with a rooftop solar system.[179] Some states have adopted net-metering mandates by statute, some have policies developed under state PUC's regulatory authority, and there is a fair amount of variation in policy design state to state.[180] Much as they did when enacting RPS laws, some states exempt publicly-owned utilities from the net-metering mandate.[181] The Interstate Renewable Energy Council reviews state net-metering policies each year and issues "grades" based on an assessment of policy design features, with demerits for any "components that discourage participation or limit renewable energy."[182] For this reason, state grades are lower in these assessments if they limit the net-metering requirement to IOUs only.[183] The APPA maintains a list of publicly-owned utilities that have adopted net-metering policies irrespective of whether a state mandate requires it.[184] City utilities were among the first to experiment with net-metering and a related mechanism, the feed-in tariff.[185] Likewise, state energy efficiency policies have often applied only to IOUs, though city utilities have been known to adopt such policies for themselves.[186]

As this discussion demonstrates, city utilities occupy a unique legal space with other public power entities and cooperatives. They often fall outside the scope of FERC's direct FPA jurisdiction based on statutory

179 *See* DSIRE, SUMMARY MAP: NET METERING (2015), *available at* http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2015/04/Net-Metering-Policies.pdf. Net metering is a "billing arrangement by which customers receive credit on their utility bills for energy generated by their on-site renewable energy system." Interstate Renewable Energy Council, *Best Practices in State Net Metering Policies and Interconnection Procedures: Glossary*, http://freeingthegrid.org/#education-center/glossary/ (last visited Feb. 6, 2016).

180 *Id.*

181 *See, e.g.*, DSIRE, *Net Metering Program Overview*, http://programs.dsireusa.org/system/program/detail/65 (last visited Feb. 6, 2016) (showing that Pennsylvania's net metering program is applicable only to IOUs).

182 INTERSTATE RENEWABLE ENERGY COUNCIL & VOTE SOLAR, FREEING THE GRID 2013: BEST PRACTICES IN STATE NET METERING POLICIES AND INTERCONNECTION PROCEDURES 16 (2013), *available at* http://freeingthegrid.org/wp-content/uploads/2013/11/FTG_2013.pdf.

183 *Id.* at 22.

184 AM. PUB. POWER ASS'N, PUBLIC POWER UTILITIES: NET-METERING PROGRAMS (2014), *available at* https://www.publicpower.org/files/PDFs/Public_Power_Net_Metering_Programs.pdf.

185 A feed-in tariff is a legal policy that requires utilities to pay incentive rates for power produced from certain renewable energy facilities to address problems of high upfront costs by providing investors a guaranteed rate of return for investments in renewable energy. CHRIS WOLD ET AL., CLIMATE CHANGE AND THE LAW 862–65 (2d ed. 2013). The cities of Austin, Texas and Gainesville, Florida, for example, have been recognized for these efforts. *See* KARL R. RÁBAGO & BENJAMIN L. NORRIS, DESIGNING AUSTIN ENERGY'S SOLAR TARIFF USING A DISTRIBUTED PV VALUE CALCULATOR 5 (2012), *available at* http://www.cleanpower.com/wp-content/uploads/090_DesigningAustinEnergysSolarTariff.pdf (discussing how the city of Austin, Texas has incorporated net metering to more fairly and accurately value solar energy); TAMMY ZBOREL, SUNSHOT SOLAR OUTREACH PARTNERSHIP, GAINESVILLE'S FEED-IN TARIFF PROGRAM 2 (2014), *available at* http://icma.org/Documents/Document/Document/306503 (noting that Gainesville's Solar Feed-in Tariff policy is a model program for U.S. municipalities).

186 Fischlein et al., *supra* note 176, at 782.

exemptions, distribution-only business models, or small quantity of sales. Jurisdictional contours under the FPA afford a degree of flexibility to city utilities, especially if it is reinforced under state law. Although PURPA's renewable energy purchase obligation applies to all utilities, PURPA standards apply to public entities less rigorously.[187] Most states have preserved a high degree of independence for their city utilities, from setting rates to implementation of renewable energy policies. Accordingly, city utilities have more room to advance low-carbon policies of their own design, if utility managers and the community want to do so. They may also be freer to lag behind the rest of the industry.

B. Cities Served by Investor-Owned Utilities

For the majority of cities, federal and state energy laws provide the backdrop for electricity service provided by an IOU. When cities enter a service area or franchise agreement with an IOU for electric power, federal and state regulation of the IOU protects cities' interest in reliable, affordable, nondiscriminatory service.[188] This legal protection for all customers within a city's borders stems from what is commonly known as the regulatory compact for territory monopolies with heightened regulation—"the utility accepts an obligation to serve in return for the government's promise to set rates that will compensate it fully for the costs it incurs to meet that obligation."[189] Whereas a city utility will typically set its own electricity rates, retail rates applicable in most cities will be set by the state PUC, affording a reasonable rate of return to investors in the private utility serving the area.[190]

The legal relationship between a city and an IOU is typically expressed in an electric franchise agreement. Within the framework of an electric franchise, cities can negotiate terms with the IOU. For example, a franchise agreement may contain provisions that clarify the city's reserved right to take over the IOU's operations within the city's borders.[191] Early industry observers recognized, as did courts, that the purchase option was a wise precaution for cities, "for it provides the opportunity for the municipality at any time to take over such property and control it absolutely for the public

187 For more on PURPA and public power, see Donna M. Attanasio, *PURPA's Public Power Impact (And What to Do About It)*, J. OF ENERGY & ENVTL. L., Summer 2014, at 1 (exploring the relevance of the impact of PURPA on today's market from the perspective of Qualifying Facility owners and public power companies).

188 However, "[a] municipal corporation undertaking to supply the public with electricity is under the same general duty to furnish service to persons desiring it as is a public service electrical company." JACK K. LEVIN & ERIC C. SURETTE, 29 C.J.S. ELECTRICITY § 51 (2015) (citing State *ex rel.* W. J. Armstrong Co. v. Waseca, 142 N.W. 319 (Minn. 1913)).

189 REGULATORY ASSISTANCE PROJECT, ELECTRICITY REGULATION IN THE UNITED STATES: A GUIDE 5 (2011), *available at* http://www.raponline.org/docs/RAP_Lazar_ElectricityRegulation InTheUS_Guide_2011_03.pdf.

190 *Id.* at 24.

191 PAUL HUGHES, RENEGOTIATING A MUNICIPAL FRANCHISE DURING ELECTRICITY RESTRUCTURING AND DEREGULATION 3–4 (2002), *available at* https://www.publicpower.org/files/PDFs/Renegotiating%20a%20Franchise.pdf.

benefit."[192] This option, even if never exercised, "acts as an important factor in forcing public consideration into the service rendered by the private concern."[193] Other provisions in a franchise agreement address such things as franchise fees and geographic boundaries, rates and service, and expiration and termination.[194] Absent terms forbidding it, courts regard franchises as generally assignable by the IOU.[195]

The expiration of a franchise is an opportunity for cities to revisit and revise the terms of their relationship with an IOU. Cities have tended not to take franchise agreements as seriously as they might to maximize public benefits and protect the cities' interests.[196] In a paper commissioned by the APPA, consultant Paul Hughes outlines a range of strategic goals and other franchise enhancements that cities can pursue "to improve the price, quality, and reliability of electric service or to achieve other community goals."[197] Franchise expiration is also an opportunity to consider whether a city utility, or a variation on public ownership, is desirable for the community.[198]

IV. CITIES ADVANCING THE LOW-CARBON GRID: OPTIONS AND LEGAL CONSTRAINTS

Considering the history in Part II as framing the legal regimes described in Part III, it becomes clear that there is not just one position for cities on the modern electric grid. Rather, there are multiple positions, based on the historical development of the electric power industry, on cities' particular political histories, on present arrangements for electricity service, and on relevant state and federal legal regimes. For cities motivated to advance the low-carbon grid, prospects and legal constraints are affected by all of these, as well as unique local circumstances.

Part IV assembles from this variability emerging approaches cities can explore. Accepting the premise that there is no one-size-fits-all model for cities to follow, this Part considers how energy law affects community-scale electricity by affording or limiting a city's low-carbon prospects. First, it considers the present legal posture of cities currently operating a utility under public ownership. Next, it addresses the legal mechanism available to cities served by IOUs for creating a new city utility to pursue emissions

192 *See* Thomas A. Cloud, *Birch Rods in the Cupboard: The Link Between Municipal Franchise Purchase Options and Franchise Fees in Florida*, 35 STETSON L. REV. 383, 393–94 (2006) (quoting OSCAR L. POND, 3 A TREATISE ON THE LAW OF PUBLIC UTILITIES § 865 (Bobbs-Merrill Co. Publishers, 4th ed. 1932)).

193 *Id.*

194 HUGHES, *supra* note 191, at 9–11.

195 LEVIN & SURETTE, *supra* note 188, § 38 (citing early case law precedents from a range of states).

196 HUGHES, *supra* note 191, at 3.

197 *Id.* at 6.

198 For example, some cities might explore a public utility district or "muni-lite" municipal utility—one "(with little or no distribution system and no generation capacity) that purchases electricity from wholesalers and then resells it to citizens and businesses using the existing franchisee's local distribution system." *Id.* at 7.

reduction goals. Finally, it discusses alternative models for shifting local fossil energy consumption toward renewable resources.

A. City Utilities in the Low-Carbon Shift

City utilities operating today face the low-carbon shift from widely varying positions. Some POUs already boast low-carbon portfolios. For example, the Large Public Power Council (LPPC) reports the biggest city utilities in the United States are working toward a collective goal of forty percent carbon-free member-owned capacity and supply purchases by 2025, with ninety percent of LPPC member supply purchases coming from wind, solar, nuclear, and hydropower over the next ten years.[199] One to the next, however, location matters. Power generating city utilities in the Pacific and New England—Mid Atlantic regions have access to significant hydroelectric power resources, supported in part by the federal preference for municipal use.[200] In these regions, there is virtually no coal-fired public power generation.[201] But the contrast with other regions is stark in this respect, reflecting widely divergent resource choices among power-generating city utilities. In 2012, POUs in the Mountain and Central states burned coal for most of the electric power they generated—over seventy percent in the Mountain and North Central states.[202]

Despite lighter regulation of city utilities under federal and state energy regimes, it may be no easier, or even harder, for city utilities to shift away from fossil resources, compared with IOUs. One source of this difficulty may stem from the 1960s emergence of power pools—interconnected electrical systems coordinated among multiple power companies—which Scott Ridley regards as a turning point for city utilities.[203] Cities worried about losing local control if they connected to power pools controlled by private utilities, but they did so, despite misgivings, fearing for their future under the strain of competition.[204] This decision, in Ridley's view, changed the face of public power, undercutting "fundamental concepts of local control and service to consumers" as those values took "a back seat" to IOU-driven initiatives.[205] This compromised position compounded in multiple directions, obscuring what had previously seemed to be clear differences between private and publicly-owned utilities. According to Ridley, public power officials found

199 Large Pub. Power Council, *On the Issues: Energy*, http://www.lppc.org/on-the-issues/energy/ (last visited Feb. 6, 2016).

200 AM. PUB. POWER ASS'N, *supra* note 89, at 31–32. Pacific Region includes Alaska, California, Hawaii, Oregon, and Washington; New England–Mid Atlantic includes Connecticut, Massachusetts, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. *Id.* at 31.

201 *Id.* at 31–32.

202 *Id.* Mountain states include Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, and Wyoming; North Central States include Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, North Dakota, Nebraska, Ohio, South Dakota, and Wisconsin. *Id.* at 31.

203 RUDOLPH & RIDLEY, *supra* note 34, at 119–20.

204 *Id.*

205 *Id.* at 120.

themselves aligned with private utility companies on issues at odds with their communities; they found themselves "aligned with private power executives in debates against angry environmentalists," and "against their own consumers over the construction of massive power lines or investment in nuclear plants."[206]

Today, just as coal-dependent states and their IOUs fear new regulation of power plant emissions, larger public power entities are in a similar position if they over-invested in fossil energy infrastructure. But city utilities that only operate distribution facilities fear new power plant rules too. Even if they will not be responsible for upgrades, any strain on the generators they buy from in the wholesale market will pass through indirectly if they are bound by long-term power purchase agreements. Thus, even though city utilities in some regions are very well-positioned for a low-carbon future, the reaction to environmental rulemaking at the federal level from the APPA and LPCC has been fairly consistent with the opposition of private power companies.[207] These comments make plain that public power is not categorically better positioned to adapt to new environmental regulations than IOUs.

Irrespective of regional profiles, however, some city utilities may be able to shift their local electricity, modestly or even dramatically, in the coming years. If the timing is right, such as when a new purchase power agreement is being fashioned to replace one expiring or to accommodate increased demand, cities may be in a position to benefit from increased availability of utility-scale renewable energy. Indeed, a growing list of city utilities taking dramatic steps to replace fossil energy suggests an emerging trend. The public power city of Burlington, Vermont, for example, has received national attention for relying entirely on renewable energy.[208] According to Burlington Electric, the utility sources "100% of our power from wood, water, wind and solar."[209] The city of Aspen, Colorado, for example, through its POU, will soon be powered entirely by renewable energy as a result of a recent deal to purchase wind energy from a Nebraska

206 *Id.*

207 *See* AM. PUB. POWER ASS'N., COMMENTS OF THE AMERICAN PUBLIC POWER ASSOCIATION (APPA) ON EPA'S SECTION 111 PROPOSED RULE FOR CARBON DIOXIDE EMISSIONS FROM EXISTING EGUS EPA-HQ-OAR-2013-0602, at 7 (2014), *available at* http://www.publicpower.org/files/PDFs/[FINAL]111(d)EPAExistingPlantsComments12.01.2014.pdf (arguing against a proposed EPA rule seeking to reduce carbon emissions by 30% as "too much too quickly"); Statement of John DiStasio, President, Large Pub. Power Council, Technical Conference on Environmental Regulations and Energy Reliability, Wholesale Electricity Markets and Energy Infrastructure, FERC Docket No. AD15-4 (Mar. 11, 2015), *available at* http://www.ferc.gov/CalendarFiles/20150310103216-DiStasio,%20LPPC.pdf (explaining that LPPC asked EPA to adjust carbon emission reduction guidelines to include additional flexibility).

208 *See, e.g.*, *Running on Renewable Energy, Burlington, Vermont Powers Green Movement Forward* (PBS NewsHour Jan. 31, 2015), *available at* http://www.pbs.org/newshour/bb/vermont-city-come-rely-100-percent-renewable-energy/.

209 Burlington Electric, *About Us: FAQs*, https://www.burlingtonelectric.com/faqs (last visited Mar. 16, 2016).

wind farm.[210] Aspen was mostly powered by renewable energy prior to the new wind arrangement—hydroelectricity and wind have provided three-quarters of local power—but the rest has still been generated with coal.[211] Similarly, the city utility in Georgetown, Texas signed a power purchase agreement to supply 100 percent of its electricity from SunEdison solar plants.[212] The deal makes the Georgetown utility "one of the first and largest in the nation to source all power from renewables."[213] The city spokesperson indicated two primary motivations for the utility's decision were to save on electricity costs and to decrease water use, compounded by the uncertain "future for regulations for fossil-based fuels."[214] The city utility in Denton, Texas has already reached forty percent renewable energy supply, but is striving now to chart a course to seventy percent renewables by 2019.[215] Rochester, Minnesota's city utility set a goal to use one hundred percent renewable energy by 2031.[216]

Larger city utilities are also shifting their portfolios along the same lines. The Sacramento Municipal Utility District in California has set a goal to cut greenhouse gas emissions to ten percent of 1990 levels by 2050.[217] The city utility for Austin, Texas advanced an ambitious plan to phase out its coal and natural gas plants and shift the city's electricity profile to over fifty percent renewable energy by 2025, including a target of 950 megawatts of utility-scale solar power.[218] As renewable energy development continues, cities increasingly will be able to transform their electricity supply with new contracts and innovative approaches. Researches have shown, for example, that the Los Angeles city utility could shift away from coal-fired power by expanding its local solar program to facilitate 1,500 MW of rooftop generation over the next decade.[219]

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210 Robert Walton, *Aspen Goes 100% Renewable with New Nebraska Wind Deal*, UTILITY DIVE, Apr. 23, 2015, http://www.utilitydive.com/news/aspen-goes-100-renewable-with-new-nebraska-wind-deal/390000/ (last visited Feb. 6, 2016).

211 *Id.*

212 Robert Walton, *Texas Town Will Get All Its Energy from Renewables with Solar Deal*, UTILITY DIVE, Mar. 19, 2015, http://www.utilitydive.com/news/texas-town-will-get-all-its-energy-from-renewables-with-solar-deal/376917/ (last visited Feb. 6, 2016).

213 *Id.*

214 *Id.*

215 Eleanor Dearman, *Denton Announces Renewable Energy Plan*, TEX. TRIB., Oct. 6, 2015, http://www.texastribune.org/2015/10/06/denton-announces-renewable-energy-plan/ (last visited Feb. 6, 2016).

216 Robert Walton, *Minnesota Town Targets 100% Renewable Energy by 2031*, UTILITY DIVE, Oct. 15, 2015, http://www.utilitydive.com/news/minnesota-town-targets-100-renewable-energy-by-2031/407381/# (last visited Feb. 6, 2016).

217 Sacramento Mun. Util. Dist., *Environment: Climate Change*, https://www.smud.org/en/about-smud/environment/climate-change.htm (last visited Feb. 6, 2016).

218 Linda Chiem, *Austin Council Oks Plan to Phase Out Old Gas, Coal Plants*, LAW360, Dec. 12, 2014, http://www.law360.com/articles/604163/austin-council-oks-plan-to-phase-out-old-gas-coal-plants (last visited Feb. 6, 2016).

219 *See* Robert Walton, *Report: Los Angeles Muni Should Boost Solar to Wean Off Coal*, UTILITYDIVE, Mar. 31, 2015, http://www.utilitydive.com/news/report-los-angeles-muni-should-boost-solar-to-wean-off-coal/381284/ (last visited Mar. 20, 2016).

B. Green Municipalization

Cities served by IOUs may be drawn to public power by a range of possibilities: lower electricity rates for residents; the ability to pursue environmental goals; control over utility decisions; and enhancing the local economy.[220] This Section focuses on the primary motivations for green municipalization—the prospect of aligning a community's power supply with its climate aspirations, and asserting local control to that end. Localizing energy through a city utility may hold appeal for communities with strong environmental values. Green municipalization represents a possibility of elected or appointed community members making the key operational decisions affecting local electricity service: what rates to charge customers, whether to generate or purchase power and from what resources, and how to support distributed generation of renewable energy.[221]

When the ideal confronts reality, creating a city utility where a private incumbent has long provided service can be extremely daunting. This was true even in the early days of utility emergence. New York City's failed effort to take public control over its hydroelectric resources in the 1930s typified, as David Nye describes, "how difficult it was to dislodge the private utilities once they were established" in the early part of the twentieth century.[222] Cities encounter much the same difficulty today, compounded by modern circumstances. This Section first provides an overview of the law governing municipalization in the context of electric power, then explores two modern efforts, in Boulder and Minneapolis, as exemplary of the challenges and possibilities in envisioning a green city utility.

1. Overview of Municipalization Law

Municipalization, as Suedeen Kelly once described it, is a city's effort "to substitute electric utility service provided by an IOU with electric service provided by the municipality itself."[223] With a publicly owned electric system, the city usually "becomes a wholesale customer" and can pursue lower-cost or alternative sources of power.[224]

The legal context for this process of energy localization is a blended landscape developed out of constitutional and state property law, local government law, utility regulation, and franchise law. In most states, local

220 *See* Am. Pub. Power Ass'n, *Benefits of Public Power*, http://www.publicpower.org/about/index.cfm?navItemNumber=37583 (last visited Feb. 6, 2016) (addressing local economic benefits of public electric utility ownership); JOHN FARRELL, INST. FOR LOCAL SELF-RELIANCE, ADVANTAGE LOCAL: WHY LOCAL ENERGY OWNERSHIP MATTERS 2 (2014), *available at* http://ilsr.org/wp-content/uploads/downloads/2014/09/Advantage_Local-FINAL.pdf (arguing that local ownership has economic and political advantages).

221 Colo. Ass'n of Mun. Util., *Public Power in Colorado*, http://www.coloradopublicpower.org/#!about/c1q8x (last visited Feb. 6, 2016).

222 NYE, *supra* note 32, at 180.

223 Kelly, *supra* note 72, at 44.

224 Alan I. Robbins & Stacy D. Gould, *Traditional Municipalization and Duplication of Facilities Cases: Background, Facts, and Status*, 37 NAT. RESOURCES J. 155, 155 (1997).

governments may determine whether to own and operate their own electric utility or to grant a franchise to an IOU.[225] Further, as a recent compendium of state municipalization laws confirms, cities in a substantial majority of states are also empowered to acquire electricity infrastructure from private incumbents to form a local utility under public ownership.[226]

The sources of this authority and rules for its exercise vary by state, but they combine elements in several basic patterns. A dominant component of municipalization law is the eminent domain power and overarching protection of the Fifth Amendment.[227] Private incumbents typically oppose local ambitions for public control. Thus, although cities may negotiate to purchase an incumbent utility's electric facilities, they may also use eminent domain if purchase offers are rejected. In an account of eminent domain law in this context, Professor Shelley Ross Saxer concludes that "acquisition of privately-owned utilities for purposes of municipalization" can "easily" satisfy the basic requirement that condemned property serve a public use.[228] Many states authorize local governments to use eminent domain for the specific purpose of acquiring electric utilities.[229] Some require prior approval from the state PUC or local voters as a prerequisite to condemnation.[230]

An integral aspect of eminent domain law is defining "just compensation" for the property in question.[231] Compensation must be determined with reference to the specific infrastructure at issue and the process can be contentious.[232] Some states have adopted statutory formulas to guide these determinations. Colorado, for example, defines "just compensation" by statute, specific to electricity distribution facilities.[233]

225 AM. PUB. POWER ASS'N, *supra* note 89, at 4.

226 *See* ABBY BRIGGERMAN ET AL., AM. PUB. POWER ASS'N, SURVEY OF STATE MUNICIPALIZATION LAWS (2012), *available at* http://www.publicpower.org/files/PDFs/Survey%20of%20Municipalization%20Laws%20-%20Duncan%20and%20Allen%20_FINAL_%20_00027359_.pdf.

227 U.S. CONST. amend. V. The Fifth Amendment to the U.S. Constitution, applicable to states via the Fourteenth Amendment, prohibits government taking of private property for a public purpose without just compensation. *See generally* Shelley Ross Saxer, *Government Power Unleashed: Using Eminent Domain to Acquire a Public Utility or Other Ongoing Enterprise*, 38 IND. L. REV. 55 (2005) (discussing the role of eminent domain and Fifth Amendment protections in municipalization proceedings).

228 Saxer, *supra* note 88, at 80.

229 *See* BRIGGERMAN, *supra* note 226 (most states that allow municipalities to establish a public utility specifically include electric utilities among the permissible types of utilities).

230 *Id.*

231 *Id.* The Foreword notes variation among states demonstrated by the survey, observing that "some states let the courts determine 'just compensation,' other states let the local public utilities commission make such a determination," while others "have even legislated the calculation." *Id.*

232 *See, e.g.*, United States v. Reynolds, 397 U.S. 14, 16 (1970) (indicating that just compensation "means the full monetary equivalent of the property taken," emphasizing the importance of the specific property at issue).

233 *See* Colo. Rev. Stat. § 40-9.5-204(1)(a)–(d) (2013) (stating elements of just compensation under Colorado statute shall be: 1) present-day cost of the facilities, minus depreciation, 2) cost of constructing new facilities that may be required for the incumbent's infrastructure after detaching the distribution facilities to be sold, 3) an amount equal to 25 percent of revenues received by the municipality from the sale of electricity in the area previously served by the incumbent utility, paid annually for ten years, and 4) an amount equal to five percent of the

These factors provide guidance to cities and utilities negotiating a separation, but the statute provides if the parties "cannot agree on the amount to be paid," they should settle the dispute in court.[234] States that have not legislated a formula specific to the electricity context typically apply generalized just compensation analyses or follow provisions addressing asset valuation that may have been incorporated into a franchise agreement.[235]

The basic legal authority to form a city utility opens up to what is, in every practical sense, a major undertaking that is only possible with strong local commitment to the goal. If the effort succeeds, it will culminate in "(1) acquisition of the distribution system, or construction of a new system; (2) alternative wholesale power supply arrangements; (3) transmission arrangements; and (4) financing."[236] Every community's circumstances are unique, but the process will typically involve a series of common steps. The community must first study the technical and financial feasibility of municipalization.[237] The APPA recommends that a city evaluate a broad range of factors: it should determine its current electric load and project annual requirements over the next decade; anticipate retail rates with the incumbent utility over the next decade and project against what might be achieved relying on alternative wholesale power suppliers; and appraise the distribution facilities serving the city and the cost of acquiring them.[238] Such projections are critically important, though they can be difficult to develop with precision, and cities may have to grapple with competing analyses. For example, after citizens of Winter Park, Florida voted to exercise the buy-out option in the city's franchise agreement with incumbent Progress Energy Florida, Progress worked to dampen public enthusiasm for the measure by commissioning its own study projecting a much higher price than the city had estimated.[239] After arbitration, the final cost was less than half of Progress' low-end figure, and the city went forward with its plans.[240] Now ten years into municipal ownership, the city estimates annual savings of $6.6 million, or 17.5%, per year.[241]

revenues received by the municipality from the sale of electricity "to the additional services that come into existence in the affected area" paid annually for ten years).

234 *Id.* § 40-9.5-204(2).

235 HUGHES, *supra* note 191, at 10.

236 Robbins & Gould, *supra* note 224, at 157–58.

237 Gregg D. Ottinger, Am. Pub. Power Ass'n, *Checklist for a Study to Determine the Feasibility of Establishing a Municipal Utility*, http://www.publicpower.org/Programs/interiorsidebar.cfm?ItemNumber=38928&navItemNumber=37543 (last visited Feb. 6, 2016); *see also* Kelly, *supra* note 17, at 43.

238 Ottinger, *supra* note 237.

239 CITY OF WINTER PARK, ELECTRIC UTILITY 10TH ANNIVERSARY POWERPOINT (2015), *available at* https://cityofwinterpark.org/docs/departments/electric-utility/10th-anniversary-presentation-2015-06-01.pdf. For a detailed account of the municipalization process in Winter Park and related litigation, see Cloud, *supra* note 192, at 418—35.

240 *Id.*

241 RANDY KNIGHT, CITY OF WINTER PARK: OUR MUNICIPALIZATION STORY, *available at* http://static1.squarespace.com/static/5504a1ffe4b08eb858c42afd/t/555ddd77e4b0ca1ccdae7c54/1432214903577/The+Winter+Park+Muni+Story.pdf (presentation to South Daytona, Florida).

When studies confirm municipalization is feasible, cities can proceed with securing necessary local approvals to enter purchase negotiations with the incumbent, which is likely to oppose a transfer. Some IOUs use positive tactics to reduce the appeal of municipalization. A city may enjoy a sudden improvement of local service, or an offer of special incentive rates to its industries.[242] If lowering rates is the primary goal of municipalization, as it has been for many cities in recent decades, these results could be enough to satisfy a city that they can continue with the private incumbent, consistent with its local objectives. As Suedeen Kelly observed in the 1990s, a concerted effort by the city may be enough to produce the changes that made public ownership attractive in the first place.[243] In the green municipalization context, a city may be able to leverage a good faith effort to take local control into meaningful carbon emissions cuts by the incumbent.

But IOUs are not always so solicitous. The APPA has criticized the range of aggressive tactics employed by IOUs "to fight the formation of new public power utilities."[244] The most common, according to the APPA, is trying "to discredit public power and thereby create doubt and fear about alternatives to renewing their incumbent franchise."[245] Looking again to the experience in Winter Park, Progress Energy formed a Political Action Committee (PAC)—Winter Park Taxpayers Against Government Owned Electric—to fight localization.[246] The PAC, virtually entirely funded by Progress Energy, spent over $500,000 on the campaign; only $750 came from Winter Park taxpayers.[247] The PAC dwarfed the city's counter PAC, Winter Park Power Options, which amassed $50,000 from city funding and managed to raise another $50,000.[248] In researching this phenomenon for the APPA, Gregg Ottinger observes that an incumbent utility need not assert that current service is better than the proposed alternative; it merely must cast municipalization as too risky to pursue.[249] An incumbent may fight the city in court to prevent municipalization from being realized, seeking to overturn any ordinance, or, if possible under state law, subjecting it to referendum approval.[250]

Beyond "just compensation" for relevant physical assets in the eminent domain context, an incumbent utility may seek financing costs and so-called separation and stranded costs.[251] Severance costs represent assets the city

242 CITY OF WINTER PARK, *supra* note 241.

243 Kelly, *supra* note 17, at 49.

244 AM. PUB. POWER ASS'N, STRAIGHT ANSWERS TO FALSE CHARGES AGAINST PUBLIC POWER 3 (2012), *available at* http://www.publicpower.org/files/PDFs/StraightAnswers.pdf.

245 *Id.*

246 CITY OF WINTER PARK, *supra* note 241.

247 *Id.*

248 CITY OF WINTER PARK, *supra* note 241.

249 Ottinger, *supra* note 237.

250 *Id.*

251 *See* BECK, *supra* note 2, at ES-1 to ES-2 (defining severance costs as costs associated with segregating facilities that serve the city from facilities that serve a larger area and "stranded costs" as calculated by the Federal Energy Regulatory Commission); XCEL ENERGY, WHAT'S THE COST OF MUNICIPALIZATION? (2011), *available at* https://www.xcelenergy.com/staticfiles/xe/Corporate/Corporate%20PDFs/Final_11%2008x10_Daily_Camera_ oct2.pdf/.

will need to acquire from the incumbent utility in order to segregate the local distribution system from the incumbent's power system.[252] Stranded costs refer to investments an incumbent has made in the service area with the expectation of recovering those costs through retail rates charged to customers with approval from the state utility commission.[253] They may be deemed "stranded" by municipalization if the incumbent has not yet recovered these costs.[254]

FERC Order 888 allows for recovery of stranded costs associated with open access transmission on the theory that open access dramatically increased the risk of incumbents losing customers and profits.[255] If stranded costs are high, this can effectively preclude municipalization.[256] An example of the potential for harsh effects can be seen in Las Cruces, New Mexico's failed municipalization effort. The impetus for Las Cruces' effort was community outrage over the private incumbent, El Paso Electric Company (EPE), investing in a nuclear power plant to be built near Phoenix, Arizona.[257] As the city had feared, the plant proved far more expensive to build than the utility projected and electricity rates in Las Cruces soared when EPE increased rates to recoup financial losses on the project.[258] When FERC applied its stranded costs formula, it determined the city owed EPE $53 million in stranded costs.[259] The ruling ballooned Las Cruces' anticipated cost of municipalization, leading the city to abandon its goal after having spent millions on the effort, and to sign a new franchise agreement with EPE.[260]

Las Cruces may have been a unique case, given the timing of the effort—starting before and concluding after FERC issued Order 888—and as the APPA has stressed, FERC "does not automatically review the sale of an IOU's assets to a municipality."[261] Stranded cost recovery is available in specific circumstances from new city utilities that are in effect "retail-turned-wholesale" customers, such as if the new city utility uses open access transmission "to reach a new power supplier."[262] If the city utility contracts with its former IOU for wholesale power, FERC's stranded costs provisions

252 *See* BECK, *supra* note 2, at 2–5.

253 *See* 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*, 75 F.E.R.C. ¶ 61,080, 61 Fed. Reg. 21,540, 21,692 (1996).

254 *Id.* at 21,692–93.

255 *Florida Power & Light Co.*, 137 F.E.R.C. ¶ 61,183 at P 40–41 (2011).

256 *See generally* Paul A. Kemnitzer, *The Anti-Competitive Effects of Stranded Costs on the Creation of Municipal Electric Companies*, 45 N.Y.L. SCH. L. REV. 701 (2002) (criticizing rationale for imposing stranded costs on cities in the municipalization process).

257 David Daniel & Douglas Gegax, *A Cautionary Tale on Municipalization*, FORUM FOR APPLIED RESEARCH & PUB. POLICY, Summer 2000, at 49.

258 *Id.*

259 *See* Opinion No. 438, *City of Las Cruces v. El Paso Electric Co.*, 87 F.E.R.C. ¶ 61,201 at P 30 (1999).

260 Laura Snider, *Former Las Cruces Mayor to Boulder: Municipalization has Perils*, DAILY CAMERA, Apr. 30, 2011, http://www.dailycamera.com/ci_17960633 (last visited Feb. 6, 2016).

261 AM. PUB. POWER ASS'N, *supra* note 89, at 25.

262 *Id.*

do not apply.[263] As this overview indicates, however, this is but one of many points in the municipalization process that has potential to create uncertainty and affect feasibility of this option for cities seeking energy autonomy. Still, although there is nothing intrinsically green about public power, some cities see new possibility in taking local control with an express goal of shifting away from carbon-based electricity.

2. Envisioning the Green City Utility: Modern Examples

This Section explores the recent experience in two such progressive cities, each of which have explored the possibility of green municipalization. While Boulder, as of this writing, continues to move closer to creating its own utility, Minneapolis considered, but ultimately rejected, the prospect in favor of continued service from the private incumbent. The process of negotiation and considering a wider range of options, however, has resulted in what is being touted as a promising and innovative partnership for achieving Minneapolis's low-carbon goals.

a. Boulder, Colorado

Boulder's vision for a city utility is rooted in community and environmental aspirations to produce "clean, reliable, low-cost, local energy."[264] Anticipating the 2010 expiration of its 1990 franchise agreement with Xcel, the city acted early to commission a feasibility study to explore green municipalization.[265] There are already twenty-nine municipal utilities in Colorado.[266] The study did not find any significant barriers to Boulder's plans, but recommended that if the city were to proceed, it should acquire the electric distribution system only, not transmission or nearby generation assets.[267] The study estimated that costs of acquiring the distribution facilities would be in the range of $93–$123 million, with potential stranded costs of $20 million.[268] In 2011, the Boulder City Council voted not to renew the franchise agreement with Xcel and continued its deliberations with a second study, which likewise determined that municipalization was feasible for the city.[269] Like Progress Energy in Winter Park, Xcel countered with its own study, which critiqued the prior analyses and concluded the move

263 *Id.*

264 *See* CITY OF BOULDER, *supra* note 3, at 9.

265 BECK, *supra* note 2, at ES-1 (Oct. 2005). Technically the franchise agreement was with Public Service Company of Colorado, which became Xcel Energy Inc. in the course of the franchise term. *Id.*

266 Colo. Mun. Utils. Ass'n, *Colorado Municipal Utilities*, http://www.coloradopublicpower.org/#!member-munis-/c1uxr (last visited Feb. 6, 2016).

267 BECK, *supra* note 2, at ES-1.

268 *Id.* at ES-4.

269 City of Boulder, *About the Boulder Energy Future Project*, https://bouldercolorado.gov/energy-future/energy-future-about (last visited Feb. 6, 2016).

would increase costs for Boulder.[270] With a population of approximately 100,000, Boulder is a significant electricity market for Xcel to lose.[271]

After analyzing the benefits and challenges of green municipalization, the city concluded "[a] local utility, free from state utility regulations and shareholder pressures, would be able to meet voter-approved requirements of increasing renewables and decreasing greenhouse gas emissions by significant amounts, while maintaining reliability and rates."[272] The research suggested further that "[a] local utility, in fact, would have a strong probability of lowering rates, on average, for a period of 20 years."[273]

Boulder residents approved ballot measures in 2011[274] and 2013[275] to proceed with forming a city utility. In January 2014, Boulder sent Xcel a Notice of Intent to acquire a portion of the utility's electricity infrastructure.[276] In taking this step, Boulder fulfilled a prerequisite to entering formal negotiations over which assets the city must acquire and at what price.[277] The city was forced to move more slowly toward its goal following a ruling of the Boulder County District Court, which affirmed that Boulder must obtain permission from the Colorado PUC before exercising eminent domain over infrastructure outside city limits.[278] In July 2015, pursuant to the ruling, the city submitted an application for approval of a proposed transfer of distribution facility assets to create, in its words, "the utility of the future."[279] The application expresses the city's confidence that a local utility can "provide the community with opportunities to decarbonize its energy source, increase citizen participation in democratic decision making regarding their use of electricity, and decentralize its energy source through expanded distributed generation."[280]

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270 XCEL ENERGY, CRITIQUE OF BOULDER'S FEASIBILITY ANALYSIS OF ACQUIRING THE ELECTRIC UTILITY BUSINESS WITHIN THE CITY 5 (2011).

271 U.S. Census Bureau, *Boulder (city), Colorado*, http://quickfacts.census.gov/qfd/states/08/0807850.html (last visited Feb. 6, 2016).

272 CITY OF BOULDER, *supra* note 3, at 5.

273 *Id.*

274 City of Boulder, *About the Boulder Energy Future Project*, *supra* note 1.

275 Erica Meltzer, *Boulder Utility Clears Hurdle as Voters Reject Xcel-Backed Question 310*, BOULDER DAILY CAMERA, Nov. 5, 2013, http://www.dailycamera.com/boulder-election-news/ci_24459325/boulder-ballot-issue-310-2e-municipalization (last visited Feb. 6, 2016).

276 City of Boulder, *City Sends Xcel Energy Notice of Intent to Acquire Parts of its Electric System*, https://bouldercolorado.gov/pages/jan-6-2014-city-sends-xcel-energy-notice-of-intent-to-acquire-parts-of-its-electric-system (last visited Feb. 6, 2016).

277 *Id.*

278 *City of Boulder v. Colo. Pub. Utils. Comm'n*, Order Re: Judicial Review of the Colorado Public Utilities Commission Decisions, No. 14CV30047, at 12 (Dist. Ct. Boulder Cty., Jan. 14, 2015).

279 *See* Verified Application of the City of Boulder, Colo., In the Matter of the Application of the City of Boulder, Colorado for Approval of the Proposed Transfer of Assets from Public Service Company of Colorado to the City and Associated Authorizations and Relief at 1–2 (No. 15A-__E) (Jul. 7, 2015), Pub. Utilities Comm'n of the State of Colorado), *available at* https://documents.bouldercolorado.gov/WebLink8/0/fol/129263/Row1.aspx.

280 *Id.* at 9.

b. Minneapolis, Minnesota

The City of Minneapolis faced a situation in some ways similar to Boulder's. In 2013, the city developed a Climate Action Plan, building on a twenty-year history of policy engagement with local greenhouse gas emissions reduction.[281] The Plan outlines strategies for carbon emissions cuts in areas of traditional local control: buildings and energy efficiency, local renewable energy, transportation and land use, and waste and recycling.[282] Yet, the research supporting the Climate Action Plan confirmed that "roughly two thirds of the [greenhouse gases] emitted in Minneapolis come from the electricity and natural gas used in buildings."[283] As in Boulder, citizens worried that Minneapolis would be unable to achieve the carbon cuts if it continued to rely on Xcel's electricity generated mostly from burning fossil fuels.[284]

In response to these concerns, the city commissioned an "Energy Pathways" study to consider alternatives for electricity that would be more consistent with the Climate Action Plan objectives.[285] The city recognized it had a narrow window of opportunity to alter the energy status quo; its franchise agreement with Xcel Energy was due to expire in 2014, and the city wanted to achieve more ambitious carbon reductions than Xcel's present resource portfolio made possible.[286] The study evaluated the merits of four "pathways" with potential to help the city pursue clean energy: 1) enhancing franchise agreements; 2) city-utility partnerships; 3) community choice aggregation (discussed in Part III); and 4) municipalization.[287] It concluded with a near-term recommendation that combined an enhanced franchise agreement and a city-utility partnership, retaining municipalization as an option if progress via the partnership model is insufficient.[288]

281 CTR. FOR ENERGY AND ENV'T, MINNEAPOLIS ENERGY PATHWAYS: A FRAMEWORK FOR LOCAL ENERGY ACTION 25 (2014), *available at* http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/wcms1p-121587.pdf [hereinafter ENERGY PATHWAYS]. Although this discussion focuses solely on the City of Minneapolis, as Professor Hari Osofsky has rightly underscored, relationships and collaborative governance among local governments across urban and suburban metropolitan regions provides a critical backdrop to the uniqueness of each city's circumstances for approaching local climate action. *See* Hari M. Osofsky, *Rethinking the Geography of Local Climate Action: Multilevel Network Participation in Metropolitan Regions*, 2015 UTAH L. REV. 173 (2015) (analyzing patterns of participation in multilevel climate change networks in six major metropolitan areas across the United States, including the Minneapolis–St. Paul metro region); Hari M. Osofsky, *The Geography of Solving Global Environmental Problems: Reflections on Polycentric Efforts to Address Climate Change*, 58 N.Y.L. SCH. L. REV. 777 (2013–2014) (offering a more detailed case study of local climate action across the greater Minneapolis–St. Paul metro area).

282 CITY OF MINNEAPOLIS, CLIMATE ACTION PLAN (2013), *available at* http://www.ci.minneapolis.mn.us/www/groups/public/@citycoordinator/documents/webcontent/wcms1p-113598.pdf.

283 ENERGY PATHWAYS, *supra* note 281, at 26.

284 *See id.* at 25–26, 73.

285 *Id.* at 13–14.

286 *Id.*

287 *Id.* at 16.

288 *Id.* at 15.

The reasons municipalization was not the best near-term solution for Minneapolis stemmed mostly from three factors: the city's immediate financial circumstances; the time involved in the undertaking; and uncertainty about market conditions affecting the city's flexibility to provide affordable low-carbon energy.[289] In 2013, Moody's downgraded Minneapolis's credit rating due to excessive debt, creating doubt over the city's ability to finance a municipalization effort. [290] It would be years before the city could realistically complete a feasibility study, acquire infrastructure, and litigate asset acquisition. It was to be expected that Xcel would resist giving up territory in its corporate home base. In an open letter to its customers, Xcel projected that residents and businesses of the city would pay "billions" for its property, and indicated publicly that the company, a major local employer, would also leave the city if municipalization went forward.[291]

In October 2014, Minneapolis followed the study's recommendations and approved new franchise agreements with Xcel, as well as with its natural gas provider, CenterPoint Energy, in conjunction with new Clean Energy Agreements to establish a City-Utility Clean Energy Partnership.[292] If it functions in the ways the city hopes it will, the Partnership will be a vehicle for clean energy collaboration between the city and private utilities. The Partnership is unique in affirmatively requiring city-utility cooperation, and creating a support infrastructure to help the Partnership succeed.[293] This takes the form of a board, established by the agreements, comprised of "the mayor, two council members, the city coordinator and two senior officials from each of the two utilities," as well as an Energy Vision Advisory Committee "to provide feedback on the board's work plan and gather feedback from critical Minneapolis communities."[294] The new agreements, effective January 2015,[295] retained some aspects of prior franchise agreements but also included significant modifications from the status quo. In the utilities' interest, existing formulas used in setting fees utilities can charge customers were preserved, but the duration was shortened to allow the city flexibility, with a term of "a minimum of five years and a maximum of [ten] with the potential to renew for up to [twenty]."[296] The Partnership is expected to work in accordance with the city Climate Action Plan, which states a goal of reducing greenhouse gas emissions by fifteen percent by

289 *Id.* at 57–63.

290 *See* Eric Roper, *Moody's Downgrades Minneapolis Debt*, MINNEAPOLIS STARTRIBUNE, July 30, 2013, http://www.startribune.com/moody-s-downgrades-minneapolis-debt/217689481/ (last visited Feb. 6, 2016).

291 David Shaffer & Maya Rao, *Xcel Energy Weighs Exit From Minneapolis Under Municipal Utility*, MINNEAPOLIS STARTRIBUNE, July 26, 2013, http://www.startribune.com/xcel-energy-weighs-exit-from-minneapolis-under-municipal-utility/217034911/ (last visited Feb. 6, 2016).

292 *See* City of Minneapolis, *Minneapolis, Xcel Energy and CenterPoint Energy Form First-of-its-Kind Clean Energy Partnership*, http://www.ci.minneapolis.mn.us/news/WCMS1P-132599 (last visited Feb. 6, 2016).

293 *Id.*

294 *Id.*

295 *Id.*

296 *Id.*

2015, thirty percent by 2030, and eighty percent by 2050.[297] This will mean working to enhance energy efficiency and renewable energy programs for customers, as well as promoting renewable energy projects in the city and using more renewable energy for the city's power.[298]

At this early stage, hopes are high for the Partnership's success, and it has been widely touted as a "first-of-its-kind" innovation in the electric utility industry.[299] The Partnership has limits, however. It does not bind the private utilities to specific measures, and though the Partnership approach will be less costly than municipalization, its success will still require city funding and commitment to the project. Soon after the Partnership was approved, the Minneapolis City Council voted to cut its budget in half from $150,000 to $75,000.[300] Although local activists convinced the City Council to reverse the decision, ongoing funding will inevitably be under pressure from other city priorities.[301]

There are many other stories from cities across the United States that have pursued public ownership of an electric utility, undoubtedly with valuable lessons for cities considering it today.[302] These examples from the modern context of green municipalization demonstrate that the process is lengthy and can be challenging, even for cities with strong community support. They also show that the "birch rod in the cupboard" analogy continues to resonate. As of this writing, Boulder is continuing toward its goal of local control and decarbonization. Although it is too early to assess the success of the Clean Energy Partnership in Minneapolis, its innovation shows that private utilities are in a position to do much more to support city goals for clean energy, but it can take the threat of loss to get their attention. The partnership model represents a departure from the status quo city-IOU relationship and underscores the potential for cities' influence in the electricity sector because, in part, they are empowered by law to take local control. Minneapolis reserves the option to investigate a green city utility if it is unsatisfied with the results as time goes on.[303]

C. Alternative Models for Energy Localization

From the discussion thus far, one can draw several conclusions with respect to cities, the low-carbon transition, and public ownership of electric

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297 *See* City of Minneapolis, *Minneapolis Clean Energy Partnership*, http://mplscleanenergypartnership.org/about/ (last visited Feb. 6, 2016).

298 *See* City of Minneapolis, *Minneapolis Climate Action Plan* (Aug. 27, 2013), http://www.ci.minneapolis.mn.us/sustainability/climate/index.htm (last visited Feb. 6, 2016).

299 *See* City of Minneapolis, *Minneapolis, Xcel Energy and CenterPoint Energy Form First-of-its-Kind Clean Energy Partnership*, *supra* note 292.

300 Lee Samelson, *Support the Minneapolis Clean Energy Partnership on December 10th*, TWIN CITIES DAILY PLANET, Dec. 6, 2014, http://www.tcdailyplanet.net/news/2014/12/06/support-minneapolis-clean-energy-partnership-december-10th (last visited Feb. 6, 2016).

301 *Id.*

302 For summary accounts of local campaigns in Long Island, New Orleans, and San Francisco, see RUDOLPH & RIDLEY, *supra* note 34, at 248–57.

303 ENERGY PATHWAYS, *supra* note 281, at 91.

power. First, under the public power model, it is possible that cities may be able to pursue renewable energy in ways they may not have been able to without a city utility. If a city is served by a private utility, it has no formal control over the energy resources used to produce its electricity. Second, however, there is nothing intrinsically "greener" about local control. POUs can face practical constraints on transitioning if they are over-invested in fossil energy infrastructure or bound by long-term contracts to purchase electricity generated by fossil fuels. Third, although such barriers may affect existing public power entities, the possibility of starting a new city utility, structured around a low-carbon goal from the beginning, remains a distinct and potentially very appealing prospect for some communities. And fourth, the legal, financial, and political factors combine to make creating the green city utility impractical, if not impossible, for many cities.

For most cities, then, the ability to advance the low-carbon grid locally depends on the availability of alternative models for local influence in the electricity sector. The Clean Energy Partnership is one such emerging approach. This Section takes up two additional models with potential to empower cities in shifting local electricity consumption away from fossil fuels: community choice aggregation and community renewable energy projects.

1. Community Choice Aggregation

In 2012, Chicago became "the largest U.S. city to start buying consolidated power"—a move celebrated by the Illinois Citizens Utility Board for cutting consumers' monthly electric bills by thirty percent.[304] Now underway for more than a year, Chicago's Electricity Aggregation Program is reportedly saving Chicagoans millions as compared to what they would have paid to the incumbent utility ComEd.[305] Critical to the low-carbon transition, Chicago reports that all electricity sourced on behalf of the City's program is from completely coal-free resources.[306]

The vehicle for this dramatic change in the City of Chicago is the mechanism known as community choice aggregation, or CCA. The aggregation concept developed in the 1990s in states that undertook retail restructuring.[307] Under retail restructuring, customers, including

304 Mark Peters & Rebecca Smith, *Take on Utility Role—Chicago and Other Communities Buy Cheaper, Often Cleaner Energy for Residents*, WALL ST. J., Nov. 11, 2012, http://www.wsj.com/articles/SB10001424052970204707104578095323990799636 (last visited Feb. 6, 2016).

305 Press Release, Office of the Mayor, City of Chicago, Mayor Emanuel Announces New Electric Bill Savings for Chicagoans (Mar. 9, 2014), *available at* http://www.cityofchicago.org/content/dam/city/depts/mayor/Press%20Room/Press%20Releases/2014/March/03.09.10Integrys.pdf.

306 *Id.*

307 U.S. Dep't of Energy, *Green Power Markets: Community Choice Aggregation*, http://apps3.eere.energy.gov/greenpower/markets/community_choice.shtml (last visited Feb. 6, 2016).

municipalities, can choose among electricity service providers.[308] They are not limited to an IOU with territorial entitlement. As prices rose, CCA offered a way to keep costs down by allowing cities to leverage the purchase power of consumers in their jurisdiction by aggregating with other cities to buy electricity at lower rates.[309] With CCA, communities can also choose their electricity generation sources "by aggregating the community load and purchasing electricity from an alternate electricity supplier while still receiving transmission and distribution service from their existing provider."[310] CCAs offer a hybrid of sorts between the services typically offered by IOUs and city utilities.[311]

Massachusetts was the first state to establish a CCA program as part of retail restructuring in 1997.[312] The new law authorized city or county governments to aggregate consumer electric loads within their boundaries to negotiate more favorable terms with a power supplier.[313] In keeping with the legal differentiation between public and private utility companies addressed in Part II, this option (along with most provisions of the law) is not available to existing city utilities.[314] The Cape Light Compact, the first municipal aggregator to be created under the law, reports to deliver "proven energy efficiency programs, effective consumer advocacy, competitive electricity supply and green power options" to 200,000 customers across more than twenty local jurisdictions.[315] As of 2014, nineteen municipal aggregations had been approved.[316] The basic legal framework for CCA in Massachusetts provides that an individual city may initiate a process to authorize electric load aggregation—that is, the aggregate load of all customers, municipal and otherwise within the city—by a majority vote of the city council, or approval of the mayor or city manager.[317] Cities can also consolidate their aggregate loads. The statute allows two or more municipalities to jointly authorize aggregation by a majority vote of each participating municipality.[318] The statute charges the state Department of Energy Resources with assisting municipalities in developing a CCA plan.[319] Each plan must demonstrate adherence to three key principles: universal access for all consumers within

308 LEAN Energy U.S., *So What Happens to the Utility?*, http://www.leanenergyus.org/what-is-cca/ (last visited Feb. 6, 2016).

309 JENNY HEETER & JOYCE MCLAREN, INNOVATIONS IN VOLUNTARY RENEWABLE ENERGY PROCUREMENT: METHODS FOR EXPANDING ACCESS AND LOWERING COST FOR COMMUNITIES, GOVERNMENTS, AND BUSINESSES 9 (2012), *available at* www.nrel.gov/docs/fy12osti/54991.pdf.

310 *Id.*

311 *Id.*

312 LEAN Energy U.S., *Massachusetts*, http://www.leanenergyus.org/cca-by-state/massachusetts/ (last visited Feb. 6, 2016) (discussing Massachusetts's CCA initiative).

313 MASS. GEN. LAWS ch. 164, § 134 (2015).

314 *Id.*

315 Cape Light Compact, *About Us*, http://www.capelightcompact.org/about/ (last visited Feb. 6, 2016) (discussing Cape Light Compact's services).

316 LEAN Energy U.S., *Massachusetts*, *supra* note 312 (discussing Massachusetts' CCA initiative).

317 *See* MASS. GEN. LAWS ch. 164, § 134 (2015).

318 *Id.*

319 *Id.* at ch. 25A, § 6.

municipal boundaries, reliability of service, and equitable treatment among classes of consumers.[320] Once an aggregation plan is approved by the state, the municipal aggregator is required to notify all consumers that they are automatically enrolled and to allow them to affirmatively "opt-out" and continue service from their existing utility without penalty.[321] As of 2014, nineteen municipal aggregators had been created in Massachusetts and thirty-five were pending state approval.[322]

Although the Massachusetts CCA legislation originated to reduce rates, there is potential to use the mechanism for clean energy and energy efficiency.[323] The same can be said for states that watched rates fall in Massachusetts and began similar programs that incorporate some of the key design features. Today, as Chicago is proving by example, the CCA concept can also be redirected to achieve low-carbon energy goals.

As of this writing, there are six states with active CCA programs: in addition to Massachusetts, California, Illinois, New Jersey, Ohio, and Rhode Island have CCA laws, and at least six more are exploring the model.[324] New York is considering CCA as part of its ongoing statewide initiative, Reforming the Energy Vision (REV), to promote renewable energy and locally produced power as defining features of state energy policy.[325]

New Jersey adopted a formal CCA law in 2003, but poor instrument design—namely an opt-in requirement and an unrealistic cost cap—led it to fail and no programs were initiated.[326] With legislative changes, aggregations began forming in 2013 to lower electric bills and increase renewable energy.[327] New Jersey's CCA law distinguishes between private and government aggregation programs and limits contracts to those that will support rates equal or lower than the price of basic generation service or rely on renewable energy consistent with statutory requirements.[328]

320 *See* DEP'T OF ENERGY RES., GUIDE TO MUNICIPAL ELECTRIC AGGREGATION IN MASSACHUSETTS 8 (2003), *available at* http://www.mass.gov/eea/docs/doer/electric-deregulation/agg-guid.pdf.

321 MASS. GEN. LAWS ch. 164, § 134.

322 *See* LEAN Energy U.S., *Massachusetts*, *supra* note 312 (discussing CCA in Massachusetts).

323 *Id.*

324 LEAN Energy U.S., *CCA by State*, http://www.leanenergyus.org/cca-by-state/ (last visited Feb. 6, 2016) (discussing CCAs across the country).

325 For an overview of REV, see N.Y. State Dep't of Public Serv., *DPS – Reforming the Energy Vision: About the Initiative*, http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument (last visited Mar. 16, 2016). For the Docket on CCA, see N.Y. Pub. Serv. Comm'n, *Order Initiative Proceeding and Soliciting Comments: Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs*, http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-M-0224&submit=Search+by+Case+Number (last visited Mar. 16, 2016).

326 LEAN Energy U.S., *New Jersey*, http://www.leanenergyus.org/cca-by-state/new-jersey/ (last visited Feb. 6, 2016).

327 *Id.*

328 *See* N.J. REV. STAT. § 48:3-92 (2014) (codifying separate energy aggregation plan for governments and setting the contract terms between the government and private power provider). "Government energy aggregation programs" are those in which a government

Illinois enacted its CCA law in 2009,[329] and within five years, over 600 communities—over eighty percent of residential customers—were participating in the aggregation with average customer rate savings of twenty-five to thirty percent.[330] By the end of 2013, over ninety local governments in Illinois, representing 1.7 million residents, were using CCA to purchase 100 percent renewable electricity for their communities.[331]

CCA in Ohio is modeled after Massachusetts's law and now serves more than 250 Ohio communities.[332] Aggregations are certified by the Ohio PUC, and can buy electricity, natural gas, or both.[333] The Northeast Ohio Public Energy Council (NOPEC) claims to be the largest governmental aggregator in the nation.[334] In 2013, NOPEC reported electricity cost savings of $185 million for more than 500,000 customers across over 170 aggregating localities.[335] When Cincinnati signed a deal to cover all the city's power through renewable energy credits under the CCA law, it was recognized as "the largest city in the U.S. and the first city in Ohio to provide an all-renewable electricity supply," standing out in a heavily coal-dependent state.[336]

California is the only one of the active CCA states where retail restructuring has been suspended.[337] As energy expert Steve Weissman explains, "when broad access to retail competition went bust in California and elsewhere, elected officials still pursued Community Choice Aggregation because many of their constituents wanted to buy power that was cleaner

aggregator enters into a written contract for electricity service or gas supply service on behalf of business or residential customers within its territorial jurisdiction. *Id.*

329 HB 0722, 213th Leg. Sess. (Ill. 2009).

330 LEAN Energy U.S., *Illinois*, http://www.leanenergyus.org/cca-by-state/illinois/ (last visited Feb. 6, 2016).

331 World Wildlife Fund et al., *91 Illinois Communities Powered 100% by Green Electricity*, CLEAN TECHNICA, Mar. 7, 2014, http://cleantechnica.com/2014/03/07/91-illinois-communities-powered-100-green-electricity/ (last visited Feb. 6, 2016).

332 LEAN Energy U.S., *Ohio*, http://www.leanenergyus.org/cca-by-state/ohio/ (last visited Feb. 6, 2016).

333 *See* OHIO REV. CODE ANN. § 4928.20 (A), (F) (2014); *id.* § 4933.02.

334 *See* Northeast Ohio Public Energy Council, *Who We Are*, http://www.nopecinfo.org/about-nopec/ (last visited Feb. 6, 2016).

335 NORTHEAST OHIO ENERGY COUNCIL, 2013 ANNUAL REPORT, *available at* http://www.nopecinfo.org/wp-content/uploads/2013/06/2013-Annual-Report.pdf.

336 Silvio Marcacci, *Is Cincinnati the Greenest City in America?*, CLEAN TECHNICA, May 3, 2012, http://cleantechnica.com/2012/05/03/is-cincinnati-the-greenest-city-in-america/ (last visited Feb. 6, 2016).

337 LOCAL GOV'T COMM'N, COMMUNITY CHOICE AGGREGATION PILOT PROJECT APPENDIX G GUIDEBOOK 5 (2009), *available at* http://www.energy.ca.gov/2009publications/CEC-500-2009-003/CEC-500-2009-003.pdf. For a helpful discussion of the differences between the California CCA model and the other active states, see Community Choice Partners, Comment to *Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs*, N.Y. PUB. SERV. COMM'N (Feb. 18, 2015), *available at* http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-M-0224&submit=Search+by+Case+Number (scroll down to filing number 24).

than that normally provided by the traditional utility."[338] The state's new RPS target requires utilities to derive fifty percent of their power from renewable energy by 2030,[339] and CCAs must also comply, but many local governments aspire to pursue even higher goals.[340] Under California's CCA law, cities can tailor their programs to serve community priorities by assembling a CCA resource portfolio.[341] For example, Marin County, California's CCA program, Marin Clean Energy, offers customers a price option of 100 percent renewable energy.[342]

Initially, the CCA program was slow to grow in California because it required customers to affirmatively opt-in, rather than opt-out of aggregation (the more effective approach for a successful program).[343] When the legislature amended the law to allow opt-out CCAs and cities began organizing toward aggregation, IOUs worked aggressively to stifle its success.[344] Pacific Gas & Electric sponsored a campaign in 2010 to stymie local efforts to form a public utility or CCA by requiring a two-thirds rather than majority vote to approve in the area to be served.[345] When the campaign failed, opponents tried again, advancing a bill last year, AB 2145, to amend the law back to opt-in.[346] This attempt failed too, and though CCA advocates do not expect it was the last attack they will see on the law, it has survived, and California cities are again working to establish CCAs.[347] For San Diego,

338 Steve Weissman, *Not My Default: With California's AB 2145, Legislators Try to Keep Cities and Counties from Buying Green Power*, LEGAL PLANET, June 20, 2014, http://legal-planet.org/2014/06/20/not-my-default/ (last visited Feb. 6, 2016).

339 DSIRE, *Renewable Portfolio Standards*, http://programs.dsireusa.org/system/program/detail/840 (last visited Feb. 6, 2016) (describing California's RPS targets).

340 *See id.* (describing Marin County's 100 percent renewable option); *see also* Cal. Energy Comm'n, *History of California's Renewable Energy Programs*, http://www.energy.ca.gov/renewables/history.html (last visited Feb. 6, 2016).

341 CAL. PUB. UTIL. CODE § 366.2 (2015).

342 MCE Clean Energy, *Deep Green 100% Renewable Energy*, http://mcecleanenergy.org/100-renewable/ (last visited Feb. 6, 2016).

343 LEAN ENERGY U.S., CALIFORNIA COMMUNITY CHOICE AGGREGATION (2013), *available at* http://www.leanenergyus.org/wp-content/uploads/2013/10/CA-Sample-How-To-For-CCA.pdf ("Unlike AB 1890, which required each customer to specifically choose non-IOU service ("opt-in" to the new service), formation of a CCA assumes that all utility customers within the CCA's boundaries will become CCA customers.").

339 *See* CAL. PUB. UTIL. CODE § 366.2(a) (2015) (allowing community choice aggregation with an opt-out provision).

345 *See* STEVE WEISSMAN & HARRY MOREN, CALIFORNIA'S PROPOSITION 16 JUNE 2010 PRIMARY: AN ANALYSIS 5 (2010). For a brief summary of this measure, known as Proposition 16, see also League of Women Voters of California, *In Depth on Measure Proposition 16: Imposes New Two-Thirds Majority Voter Approval Requirement for Local Public Providers*, https://lwvc.org/election/2010/june/ballot-measure/proposition-16/in-depth (last visited Feb. 6, 2016).

346 *See* Weissman, *supra* note 338 (describing California AB 2145).

347 Roy L. Hales, *California's "Monopoly Protection Act," AB 2145, Is Dead*, CLEAN TECHNICA, Sept. 4, 2014, http://cleantechnica.com/2014/09/04/californias-monopoly-protection-bill-ab-2145-dead/ (last visited Feb. 6, 2016).

which drew national attention for it committing to a 100 percent renewable energy transition by 2035, the CCA is a critical vehicle.[348]

Despite the political constraints that have slowed its development, California's CCA holds promise as a model for climate-driven cities in non-restructured states to advance in their state legislatures. As San Francisco's spokesperson explained the city's interest in CCA, "We want to control our energy destiny. That's the impetus for this effort, plus the opportunity to reduce our greenhouse-gas footprint and incubate our own clean-energy industry."[349] Under California's program, cities can form a Joint Powers Agency to govern the CCA, in this way, as a CCA consultant explained to the New York Public Service Commission, "the programs increasingly resemble municipal utilities, but without a distribution grid."[350] Although CCA emerged alongside the trend toward retail restructuring, operation of the model does not seem to depend in any fundamental way on a restructured retail environment. With enabling legislation, traditionally structured states could support cities to aggregate load and address conflicts with the state's existing utility regime. CCA will likely face political opposition from IOUs with monopoly power, but departing load could be treated in ways similar to the municipalization context. The CCA model originated to cut electricity costs, and as the price of wind and solar power continues to fall,[351] CCA can offer cities affordable access to these resources via economies of scale and the ability to finance procurements with tax-exempt bonds. When cities can use the CCA model to buy affordable renewable energy, they help drive development of utility-scale low-carbon electricity. In the grid transition, expanded access to CCA will allow more cities to redirect local consumption to renewable resources.[352]

There may be other contexts in which the aggregation concept could apply to advance the low-carbon shift at the city-scale. With a focus on the "distribution edge"—the interface between utility distribution systems and energy assets "at or near consumer premises"—the Rocky Mountain Institute (RMI) has applied aggregation in the finance context.[353] RMI describes how a business model they term a "distributed resource finance aggregator" could structure consumer investment in efficiency and distributed generation via a utility bill, working with third-party service

348 *See* Claire Trageser, *How Will San Diego Reach Its 100% Renewable Energy Goal?*, KPBS, Jan. 8, 2016, http://www.kpbs.org/news/2016/jan/08/how-will-san-diego-reach-its-100-renewable-energy-/ (last visited Mar. 16, 2016).

349 Peters & Smith, *supra* note 304.

350 Community Choice Partners, *supra* note 337.

351 *See, e.g.*, Tom Randall, *Solar and Wind Just Passed Another Big Turning Point*, BLOOMBERG BUS., Oct. 6, 2015, http://www.bloomberg.com/news/articles/2015-10-06/solar-wind-reach-a-big-renewables-turning-point-bnef (last visited Feb. 6, 2016) (discussing the increasing affordability of wind and solar relative to fossil fuels).

352 SHAWN E. MARSHALL, FORMING A NATIONAL COMMUNITY CHOICE AGGREGATION NETWORK: FEASIBILITY, FINDINGS AND RECOMMENDATIONS 1 (2010), *available at* http://www.galvinpower.org/sites/default/files/Community_Choice_Aggregation_Report_Final_1-4-11.pdf.

353 ROCKY MTN. INST., NEW BUSINESS MODELS FOR THE DISTRIBUTION EDGE 6 (2013), *available at* http://www.rmi.org/PDF_eLab_New_Business_Models_Report.

providers.[354] As RMI envisions it, this model could operate within the conventional utility structure of integrated utilities "and could be especially attractive to municipal utilities."[355]

2. Community Solar and Wind / Shared Renewables

Community solar and wind, or shared renewables, represents an emerging model to energy localization that cities may help facilitate to increase renewable energy as a source for local electricity.[356] This kind of project is a form of distributed electricity generation that does not necessarily make use of consumers' own property, but allows them to buy electric power that is locally generated.[357] A shared renewables project is typically constructed offsite, but can also be onsite but still shared, such as with a multi-unit building.

The focus of this discussion is on community solar because it is more prevalent, but both forms of renewable energy can be utilized with this model.[358] The appeal of community solar is that it offers customers a way to support localized renewable energy even if they cannot or choose not to install a solar system on their own roof. To date, most community solar projects have been utility-led, initiated mostly by city utilities and cooperatives, but also IOUs and, where allowed, third-party developers.[359] As the Solar Electric Power Association explains, community solar projects are typically structured one of two ways. One approach is to sell solar kilowatt-hours "through a solar rate, which allows customers to subscribe directly with the utility to get some amount of their electricity from solar energy."[360] The other common approach allows customers to "own or lease a share of one or more of the remote solar installations."[361] With multiple variables contributing to each project's design, there is not a "one-size-fits-all approach" applicable to every location.[362]

354 *Id.* at 16.

355 *Id.*

356 This model is also referred to as shared renewables or community power projects. *See* Uma Outka, *Environmental Justice Issues in Sustainable Development: Environmental Justice in the Renewable Energy Transition*, 19 J. ENVTL. & SUSTAINABILITY L. 60, 66, 77–78 (2012).

357 The Solar Energy Power Association (SEPA) defines community solar "as a program through which individual members of a community have the opportunity to 'buy in' to a nearby solar installation." BECKY CAMPBELL ET AL., EXPANDING SOLAR ACCESS THROUGH UTILITY-LED COMMUNITY SOLAR 4 (2014), *available at* http://www.solarelectricpower.org/media/214996/community-solar-report-ver5.pdf.

358 *See* PATRICK MAZZA, COMMUNITY WIND 101: A PRIMER FOR POLICYMAKERS 4 (2008), http://www.communitypowernetwork.com/node/89 (last visited Feb. 6, 2016); John Farrell, *How Community Ownership Can Save Wind Power*, INST. FOR LOCAL-SELF RELIANCE, Mar. 22, 2011, https://ilsr.org/how-community-ownership-can-save-wind-power-2/ (last visited Feb. 6, 2016).

359 CAMPBELL ET AL., *supra* note 357, at 5–6. *See also* Community Solar Hub, *Charting the Progress of Community Solar Projects*, www.communitysolarhub.com (last visited Feb. 6, 2016) (tracking projects completed and in development).

360 SEPA, *Community Solar*, https://www.solarelectricpower.org/examine-issues/business-models/community-solar.aspx (last visited Feb. 6, 2016).

361 *Id.*

362 *Id.*

Legal, administrative, and financing barriers can make it difficult for cities that do not operate their own utilities to sponsor community solar projects. A utility has the internal infrastructure to develop and operate community solar, and cities, as public entities, have more limited access to funding mechanisms and incentives associated with renewable energy, such as the Production Tax Credit and Clean Renewable Energy Bonds.[363] Yet even cities that do not operate a utility can play an instrumental role in facilitating shared renewables.[364] The important role of cities in promoting community solar was a key message of the White House National Community Solar Summit held late in 2015, in which "68 cities, states, and businesses" focused on increasing access to solar power for "the nearly 50 percent of households and business that cannot install solar system."[365] Local governments can utilize their legal authority over land in anticipation of community solar.[366] Cities can be strategic, for example, in identifying parcels that will be both physically suitable and sufficiently visible to raise public awareness and draw attention to the projects.[367] Cities may also be in a position to direct underutilized publicly-owned property for community solar projects to support renewable energy development. The Institute for Local Self-Reliance surveyed city property in 201 cities with populations over 100,000 to assess suitability for solar power generation, and projected potential for "5 gigawatts of municipal solar" in twenty-two states that allow third-party ownership of solar systems.[368]

Cities may also be able to partner with third-party or utility sponsors for community projects. In doing so, cities are uniquely positioned to advance local social justice goals by connecting projects with affordable housing, as

363 HEETER & MCLAREN, *supra* note 309, at 17.

364 U.S. DEP'T OF ENERGY, SOLAR POWERING YOUR COMMUNITY: A GUIDE FOR LOCAL GOVERNMENTS 5 (2011), *available at* http://www1.eere.energy.gov/solar/pdfs/47692.pdf (advising cities to engage the utility early and offering other recommendations for implementing community solar).

365 Press Release, The White House, Fact Sheet: Administration Announces 68 Cities, States, and Businesses Are Working Together to Increase Access to Solar for All Americans (Nov. 17, 2015).

366 I and others have explored the importance of this role in the context of both larger-scale projects and distributed generation alike. *See, e.g.*, Hannah J. Wiseman & Sara C. Bronin, *Community-Scale Energy*, SAN DIEGO J. CLIMATE & ENERGY L., 2012–2013, at 165 (outlining ways that local policymakers can use existing authority to promote community-scale renewable energy projects); Uma Outka, *The Energy-Land Use Nexus*, 27 J. LAND USE & ENVTL. L. 245 (2012) (presenting a framework for policymaking that minimizes conflict between energy and land use goals); Patricia Salkin, *The Key to Unlocking the Power of Small Scale Renewable Energy: Local Land Use Regulation*, 27 J. LAND USE & ENVTL. L. 339 (2012) (highlighting relevant sources of local land use authority); Uma Outka, *Siting Renewable Energy: Land Use and Regulatory Context*, 37 ECOLOGY L.Q. 1041 (2010) (discussing how state and local governments can guide renewable energy siting for environmental and community compatibility).

367 U.S. DEP'T OF ENERGY, *supra* note 307, at 17–18.

368 *See* JOHN FARRELL & MATT GRIMLEY, PUBLIC ROOFTOP REVOLUTION 3 (2015), *available at* http://ilsr.org/wp-content/uploads/2015/06/Public-Rooftop-Revolution-report-ILSR.pdf.

Seattle City Light has done.[369] This link between solar and low- and moderate-income households was a central focus of the White House Summit. Shared renewables have been called "the great equalizer" in the solar context, because the model makes distributed generation available to renters and property owners who could otherwise not afford a personal system.[370] Cities may also be able to achieve climate goals through the shared renewables mechanism as a customer. The City of Cologne, Minnesota is reported to be among the first municipal governments to "meet its entire electricity need with solar-generated power" by subscribing to a third-party developed community shared solar project.[371]

As of this writing, fourteen states and the District of Columbia have enacted such legislation, or approved a shared renewables model through the state PUC.[372] The leader in community solar to date is Colorado, where its 2010 "Community Solar Gardens" pilot legislation was so popular, over forty-one projects have been developed.[373] Other states that explicitly accommodate shared renewables include California, Connecticut, Delaware, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, Oregon, Vermont, and Washington.[374] The trend continues to widen as more states consider the appeal and possibilities of community solar for their residents.[375]

This growth has inspired enthusiasm and attracted notable attention. A recent analysis by the National Renewable Energy Laboratory (NREL) projects that community solar could account for between a third and one half of photovoltaic solar power across the United States by the end of the decade.[376] Yet the proliferation of community solar and wind is growing slower than it might due to legal uncertainty in many states over how to structure shared renewables projects. In states without dedicated legislation, regulatory uncertainty appears to be slowing growth in community solar, even if has not proved a complete barrier to development. Community Solar Hub has tracked over ninety community solar projects

369 *See* Seattle City Light, *Community Solar: Current Projects*, http://www.seattle.gov/light/solarenergy/commsolarcurrent.asp (last visited Feb. 6, 2016) (discussing progress on current solar projects in the Seattle area).

370 *See* Herman K. Trabish, *Why Community Shared Solar is Ready to be the "Great Equalizer"*, UTILITY DIVE, Apr. 30, 2015, http://www.utilitydive.com/news/why-community-shared-solar-is-ready-to-be-the-great-equalizer/392045/ (last visited Feb. 6, 2016).

371 Herman K. Trabish, *Minnesota City Goes 100% Renewable with Subscription to Community Shared Solar*, UTILITY DIVE, June 15, 2015, http://www.utilitydive.com/news/minnesota-city-goes-100-renewable-with-subscription-to-community-shared-so/400701/ (last visited Feb. 6, 2016).

372 *See* Shared Renewables, *USA Shared Energy Map*, http://www.sharedrenewables.org/community-energy-projects/ (last visited Feb. 6, 2016).

373 H.B. 1342, 76th Cen. Assemb. 2d Leg. Sess. (Colo. 2010) (enacted).

374 Shared Renewables, *USA Shared Energy Map*, *supra* note 372. *See also* DAVID FELDMAN ET AL., NAT'L RENEWABLE ENERGY LAB., SHARED SOLAR: CURRENT LANDSCAPE, MARKET POTENTIAL, AND THE IMPACT OF FEDERAL SECURITIES REGULATION app. A (2015).

375 *See, e.g.*, N.C. CLEAN ENERGY TECH. CTR., THE 50 STATES OF SOLAR 22—23 (2016), *available at* https://nccleantech.ncsu.edu/wp-content/uploads/50sosQ4-FINAL.pdf.

376 FELDMAN ET AL., *supra* note 374, at 32.

initiated across at least twenty-five states—more states than have dedicated legislation or utility commission rules.[377] Still, more than half of community solar projects are in states that have legislative certainty, underscoring its importance to growth in shared renewables.[378] As states continue to develop and clarify relevant legal frameworks, cities in the remaining states will be able to more confidently initiate or otherwise support projects in their jurisdictions. When the regulatory environment meets the pent-up demand for renewable energy generation in cities, the NREL predicts "tremendous potential growth" for this form of localized energy, "expanding the potential customer base to 100 percent of homes and businesses."[379]

V. CONCLUSION

Building on local achievements cutting carbon from the built environment and transportation, cities are using an increasing array of legal tools in an effort to decarbonize at the grid's edge. Electric power plants are the most significant source of greenhouse gas emissions.[380] Cities in the United States and around the world are recognizing the collective impact they can have on climate change mitigation. The challenges of international negotiations have not prevented cities from creating coalitions to share goals, strategies, and to track reductions in greenhouse gas emissions.[381] Cities' influence can also help drive the low-carbon transition in the electricity sector.

The green city utility as a model for energy localization blends traditional public power values—community responsiveness and low rates—with modern climate change commitments. This model also resonates with social justice advocates, seeking more effective strategies for equity in the low-carbon transition. The Energy Justice Network asserts, "[u]ltimately, we need our movement for energy justice to be a movement that not only stops dirty energy in its tracks, but builds solutions that are decentralized, publicly-owned, and democratically controlled. Public utilities must truly be

377 *See* Community Solar Hub, *Charting the Community Solar Movement*, https://www.communitysolarhub.com/projects (last visited Feb. 6, 2016) (listing projects across the United States completed or pending and subscription status).

378 CAMPBELL ET AL., *supra* note 357, at 5.

379 FELDMAN ET AL., *supra* note 374.

380 U.S. Envtl. Prot. Agency, *Sources of Greenhouse Gas Emissions*, http://www3.epa.gov/climatechange/ghgemissions/sources.html (last visited Feb. 6, 2016).

381 *See* COMPACT OF MAYORS, *supra* note 11 (a global coalition of mayors and city officials committed to reducing local greenhouse gas emissions, enhancing resilience to climate change and tracking their progress publicly); ICLEI Local Governments for Sustainability, *Who We Are*, www.iclei.org (last visited Feb. 6, 2016) (the world's leading network of over 1,000 cities, towns, and metropolises committed to building a sustainable future); UNITED NATIONS ENVTL. PROGRAMME, DISTRICT ENERGY IN CITIES: UNLOCKING THE POTENTIAL OF ENERGY EFFICIENCY AND RENEWABLE ENERGY 19 (2015), *available at* http://unep.org/energy/portals/50177/DES_District_Energy_Report_full_02_d.pdf (detailing prospects for district energy and "45 cities around the world" that are using this approach to cutting emissions).

public to have economic incentives to use less."[382] Refreshed and emerging models for energy localization, as their availability expands, may allow cities served by traditional private utilities to pursue climate aspirations in spite of their IOUs. For some cities, this may be achieved through green municipalization, as Boulder is striving to achieve. For others, it may be possible to refresh stale franchise relationships into collaborative partnerships, as Minneapolis has worked to do. By fostering community solar and wind projects, aggregating buying power for renewable electricity, and advocating for state law that encourages these approaches, cities increasingly can help shape the low-carbon grid.

382 Energy Justice Network, *Dirt Cheap Clean Energy?*, http://www.energyjustice.net/files/ejnow/2015-01.html (last visited Feb. 13, 2016).