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Public Energy

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PUBLIC ENERGY

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Many scholars and policy makers celebrate cities as loci for addressing climate change. In addition to being significant sources of carbon pollution, cities prove to be dynamic sites of experimentation and ambition on climate policy. However, as U.S. cities set climate change goals far above those of their federal and state counterparts, they are butting up against the limits of their existing legal authority, most notably with regard to control over energy supplies. In response, many U.S. cities are exercising their legal rights to reclaim public ownership or control over private electric utilities as a method of achieving their climate change goals.

Although there is widespread desire for cities to act within their legal authority to reduce carbon pollution, it is a different question entirely whether they should be encouraged to expand this authority by reclaiming ownership or control over tasks previously outsourced to private companies. On this question, energy law has much to learn from administrative law's robust attention to outsourcing theory. This Article draws from the outsourcing literature to argue that climate change complicates traditional theories regarding whether cities should prefer publicly or privately owned electricity systems. By transposing these theories into energy law, it constructs a theoretical defense of why more public forms of energy ownership or control may be effective governance tools for the climate change era. In the last century, providing electricity was a task well suited to government oversight of private companies, as regulators primarily aimed to incentivize low prices and adequate supply. This century, however, climate change creates the need for more deliberative, experimental management of electricity to meet the additional aim of decarbonization while maintaining affordability and reliability. In this situation, outsourcing theory widely counsels against utilizing a private contractor model, and illustrates the difficulties inherent in using regulation to manage private companies. Instead, it is time for broader reconsideration of more public forms of energy control and ownership, of just the sort that leading U.S. cities are pioneering.

INTRODUCTION 268
I. CONTRACTING OUT: NOW AND THEN 280
A. *Contemporary Contracting Out Theory* 281
B. *Contracting Out Electricity: Municipalization's Rise and Fall* 285
C. *State Regulation's Long and Evolving Reign* 291
II. ELECTRICITY GOVERNANCE UNDER CLIMATE CHANGE 294

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A. *Climate Change and Electricity* 295
B. *Regulatory Solutions* 300
C. *Modern Energy Ownership: Municipalization Reborn* 304
D. *Community Choice Aggregation: "Deregulated Municipalization"* 308
III. CONSTRUCTING A THEORY OF PUBLIC UTILITY OWNERSHIP 313
A. *Old Choice, New Theory: Contracting Out Electricity* 314
1. *Specificity* 315
2. *Ease of Evaluation* 317
3. *Competition* 317
4. *Beyond the Classic Criteria* 318
B. *Outsourcing Theory and Alternative Regulatory Structures* 320
IV. FROM THEORY TO PRACTICE 328
A. *Economic Disadvantage?* 329
B. *A Climate-Focused Public Utility in Action* 332
1. *Austin's Decarbonization Trajectory* 332
2. *Linking Governance and Success* 334
V. CLIMATE LOCALISM AND PUBLIC ENERGY 338
A. *Why Local?* 338
B. *The State Role* 343
C. *Beyond Localism* 345
CONCLUSION 348

INTRODUCTION

In September 2013, the area around Boulder, Colorado received as much rainfall in three days as it typically does in an entire year.[1] Floods swept through the city and surrounding towns, destroying thousands of homes, damaging tens of thousands more, and washing out miles of road.[2] In the days and weeks following the floods, hundreds of stories detailed how residents came together to help families

[1] *See* Charlie Brennan & John Aguilar, *Eight Days, 1,000-Year Rain, 100-Year Flood*, DAILY CAMERA (Sept. 21, 2013, 7:49:24 PM), http://www.dailycamera.com/news/boulder-flood/ci_24148258/boulder-county-colorado-flood-2013-survival-100-rain-100-year-flood (quoting the National Weather Service as describing how "[s]ome areas were getting close to their annual rainfall in a three-day period").

[2] *See* Amanda Paulson, *For Colorado's 'Biblical' Floods, Numbers Tell Astonishing Tale*, CHRISTIAN SCI. MONITOR (Sept. 18, 2013), http://www.csmonitor.com/USA/2013/0918/For-Colorado-s-biblical-floods-numbers-tell-astonishing-tale-video (describing the damage caused by floods).

in need.[3] Two months later, the city came together in a different way: During a November 2013 referendum, Boulder residents exercised their legal right to "municipalize" electricity service by voting resoundingly in favor of assuming public ownership of the city's electricity infrastructure.[4] This timing suggests that whether or not scientists attribute Boulder's floods to climate change,[5] residents drew a link[6]: their aim in voting to municipalize was to respond to climate change more quickly than Colorado or the United States as a whole are willing to do.[7]

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[3] *See, e.g.*, Amy Bounds, *In Midst of Disaster, Boulder County Rises*, DAILY CAMERA (Sept. 28, 2013, 4:23 PM), http://www.dailycamera.com/news/boulder-flood/ci_24185220/boulder-flood ("As many stories as there are of destruction and narrow escapes from raging water or mudslides across Colorado's Front Range, there are even more of neighborhoods banding together or strangers lending a hand . . . ."); Amanda Paulson, *Heroes of the Colorado Floods: Tales of Bravery by Neighbors and Strangers*, CHRISTIAN SCI. MONITOR (Sept. 18, 2013), http://www.csmonitor.com/USA/2013/0918/Heroes-of-the-Colorado-floods-Tales-of-bravery-by-neighbors-and-strangers (describing stories of residents coming together to help those affected by the flood).

[4] Boulder residents voted 66.5% in favor of Ballot Question 2E, a City Council–backed proposal for structuring and limiting city debt resulting from municipalization, and rejected by 69.9% the utility-proposed Question 310, which would have placed greater restrictions on municipalization. *See* Erica Meltzer, *Boulder Utility Clears Hurdle as Voters Reject Xcel-Backed Question 310*, DAILY CAMERA (Nov. 5, 2013, 6:49 PM), http://www.dailycamera.com/boulder-election-news/ci_24459325/boulder-ballot-issue-310-2e-municipalization (ballot results); *2013 Ballot*, CITY OF BOULDER COLO., https://bouldercolorado.gov/elections/2013-ballot (last visited Oct. 16, 2016) (ballots). Prior to the floods, a 2011 ballot initiative beginning the municipalization process passed by only a narrow margin. *See* Stephanie Simon, *Boulder Votes for Municipal Utility*, WALL ST. J. (Nov. 3, 2011), http://www.wsj.com/articles/SB10001424052970204621904577014231689288216 ("Voters in Boulder, Colo., narrowly backed the creation of a municipal power authority to replace Xcel Energy Inc., the biggest electricity provider in Colorado.").

[5] *Compare* Stephanie C. Herring et al., *Explaining Extreme Events of 2013 from a Climate Perspective*, BULL. AM. METEOROLOGICAL SOC'Y (Am. Meteorological Soc'y, Boulder, Co.), Sept. 2014, at S1, S18 ("[T]he occurrence of extreme five-day rainfall over northeast Colorado during September 2013 was not made more likely, or more intense, by the effects of climate change."), *with* Kevin E. Trenberth, John T. Fasullo & Theodore G. Shepherd, *Attribution of Climate Extreme Events*, 5 NATURE CLIMATE CHANGE 725, 725 (2015) (linking Boulder's 2013 flooding to high sea surface temperatures with "a discernable human component").

[6] This timing only suggests potential correlation, and can't be taken as proof of causation, of course.

[7] Boulder aims to reduce its greenhouse gas emissions at least 80% below 2005 levels by 2050—a more ambitious aim than the current U.S. pledge to achieve around a 27% reduction from 2005 levels by 2025. *See* CITY OF BOULDER, BOULDER'S CLIMATE COMMITMENT 4 (2015), https://www-static.bouldercolorado.gov/docs/Boulder_Climate_Commitment_Doc-1-201510231704.pdf (Boulder's emission reduction target); United States of America, *Intended Nationally Determined Contribution*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (Mar. 31, 2015, 4:03:15 PM), http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf (the United States' emission reduction target); *see also* Meltzer, *supra* note 4 (quoting Boulder's mayor as explaining that the municipalization effort "is

By claiming control over its energy supply, Boulder is contravening a century-long literature and seemingly linear history away from municipalization, towards public utility commission oversight of private electric companies, as the best way to run electric utilities. Why does it think it can enter the technical field of utility management and outperform the dominant model of electric utility regulation in the United States?

This Article argues that climate change complicates the traditional assumption that privately owned electric utilities, driven by profit motives and cabined by regulatory oversight, can most effectively and efficiently run our electricity system. Drawing from the growing field of outsourcing literature within administrative law, this Article suggests that many of the criteria that make outsourcing acceptable in certain fields are increasingly lacking in the electricity sector. In particular, climate change alters the assumption that there is a Weberian, apolitical "management" aspect to electric utilities that exists apart from significant political decisions that must be made about how to transform the electricity grid in the coming decades.[8] Electricity regulation's increasingly multifaceted aims and experimental nature suggest strong theoretical reasons to prefer more public forms of energy ownership or control in the climate change era.

Boulder's aims in municipalizing are unusual. The few cities that have municipalized in recent decades have done so predominantly to cut costs, not to accomplish wider policy objectives like mitigating climate change.[9] But Boulder is not alone in its desire to reclaim public ownership as a method of implementing social policy: its efforts accord both with the Progressive-era history of municipalization in the United States, and with the efforts of several contemporary cities. Minneapolis, Davis, and Santa Fe have joined Boulder in considering

about our environmental and economic future" and that "[t]his conversation has to continue, and if it can't continue in Boulder, where can it continue?").

[8] *See* MAX WEBER, ECONOMY AND SOCIETY 218 (Guenther Roth & Claus Wittich eds., Ephraim Fischoff et al. trans., Univ. of Cal. Press 1978) (1922) (observing that legal authority in the bureaucratic context is legitimated by the existence of a sphere of jurisdiction where "the necessary means of compulsion are clearly defined and their use is subject to definite conditions").

[9] *See, e.g.*, Suedeen G. Kelly, *Municipalization of Electricity: The Allure of Lower Rates for Bright Lights in Big Cities*, 37 NAT. RESOURCES J. 43, 43 (1997) (explaining that 33 cities in the early 1990s "seriously considered electric municipalization" as a way to "lower electric rates by taking advantage of changes made in 1992 to federal law that make it easier to procure cheaper, wholesale electric power"); Shelley Ross Saxer, *Eminent Domain, Municipalization, and the Dormant Commerce Clause*, 38 U.C. DAVIS L. REV. 1505, 1508 (2005) [hereinafter Saxer, *Eminent Domain*] ("Municipalization has occurred with electric distribution systems as municipalities have pursued lower electric rates and improved service reliability.").

full city ownership.[10] Chicago, San Francisco, San Diego and hundreds of smaller communities are considering or have adopted climate-oriented "community choice aggregation" (CCA) programs.[11] In these programs, the city acts as electricity supplier—making all purchasing decisions and perhaps owning some generation—although not grid owner.[12] In both of these models, cities are reclaiming legal control over previously privatized utility functions in order to meet decarbonization goals—that is, goals to reduce their levels of carbon pollution in order to respond to the problem of climate change.[13]

Scholars and policy makers widely agree that cities "can contribute meaningfully to U.S. climate change mitigation by reducing emissions within their well-accepted domains of power."[14] Cities

[10] *See infra* Sections II.C, V.B (describing such efforts in Minneapolis, Santa Fe and Boulder); *see also* Staff Report from Steve Pinkerton, City Manager, to Davis City Council (Oct. 23, 2012) (on file with author) (describing such efforts in Davis).

[11] *See infra* notes 222–30 and accompanying text.

[12] In CCAs, the city reclaims authority over contracting for electricity supply—including decisions regarding purchase price and sources—while continuing to rely upon the private utility to deliver purchased electricity to customers and to maintain the electricity grid. For more detail, see *infra* Section II.D.

[13] Other countries are also experiencing movements towards public ownership. Most notably, activists across Germany have remunicipalized more than 70 local utilities since 2007, also largely in a push to address climate change more effectively. *See* Jeevan Vasagar, *German Grids Restored to Public Ownership*, FIN. TIMES (Nov. 25, 2013), http://www.ft.com/cms/s/0/2f3b0b1e-4dee-11e3-8fa5-00144feabdc0.html#axzz4IomI8LHb (describing Hamburg's vote on whether to return to public ownership as "the latest evidence of a trend that has seen dozens of energy grids in Germany restored to municipal ownership"). Public ownership models also exist at the *national* scale in many countries, although there has been a trend away from national ownership, towards privatization, in recent decades. *See* Frank A. Wolak, *Regulating Competition in Wholesale Electricity Supply* (noting deregulation of state-owned electricity industries in England, Wales, Norway, Sweden, Spain, Australia, and New Zealand beginning in the late 1980s), *in* ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED? 195, 201 (Nancy L. Rose ed., 2014). *See generally* DAVID M. NEWBERY, PRIVATIZATION, RESTRUCTURING, AND REGULATION OF NETWORK UTILITIES (1999) (providing an analysis of privatization versus regulation of network utilities).

[14] Katherine A. Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. REV. 669, 677 (2010) [hereinafter Trisolini, *All Hands on Deck*]; *see also* PONTIFICAL ACAD. OF SCI. & SOC. SCI., MODERN SLAVERY AND CLIMATE CHANGE: THE COMMITMENT OF THE CITIES (2015), http://www.pass.va/content/dam/scienzesociali/booklet/declaration21july2015.pdf (gathering signatures of mayors at Vatican-sponsored event who expressed a commitment to ending climate change and modern slavery); Michael Burger, *Empowering Local Autonomy and Encouraging Experimentation in Climate Change Governance: The Case for a Layered Regime*, 39 ENVTL. L. REP. NEWS & ANALYSIS 11161, 11161 (2009) ("In order to preserve the local autonomy values that underlie local action, and to capture the benefits of regulatory experimentation that result from it, federal climate change law should grant an agency . . . the discretion to approve local climate action plans that include measures that surpass federal ceilings."); Kirsten Engel, *State and Local Climate Change Initiatives: What Is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006)

house over 80% of the U.S. population[15] and contribute somewhere between 30% and 75% of global carbon dioxide emissions.[16] They also prove key sites of democratic contestation and expression of popular will on climate change, with many cities adopting decarbonization goals far above those of their state or federal counterparts.[17]

But as U.S. cities adopt more ambitious climate aims, many are butting up against the limits of their existing legal authority, most notably with regard to control over energy supplies. [18] In response, no doubt more cities will take steps of the type Boulder is pioneering:

(describing how states have taken the initiative in addressing climate change and analyzing the consequences of these state activities); Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253, 280–88 (2009) (providing institutional justifications for local control and describing ongoing, ambitious local actions to address climate change); Daniel C. Esty & Rudy Provoost, *Shifting Gears on Climate Change*, HUFFINGTON POST (Sept. 21, 2015, 8:26 AM), http://www.huffingtonpost.com/daniel-c-esty/shifting-gears-on-climate-change_b_8167428.html ("[A]ny new commitment to action must include broadened 'ownership' of the climate change agenda and efforts to highlight progress particularly at the city, state/province, and corporate scales."). *See generally* Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008) (arguing for a pluralist architecture of climate law in which cities and states play important roles alongside international and countrywide actors).

[15] U.S. Census Bureau, *Frequently Asked Questions*, U.S. CENSUS, https://ask.census.gov/faq.php?id=5000&faqId=5971 (last visited Oct. 16, 2016) ("The urban areas of the United States for the 2010 Census contain 249,253,271 people, representing 80.7% of the population . . . .").

[16] *Compare* UNITED NATIONS ENV'T PROGRAMME, CITIES AND BUILDINGS 1 (n.d.) (estimating that cities are responsible for 75% of global carbon dioxide emissions), *with* David Satterthwaite, *Cities' Contribution to Global Warming: Notes on the Allocation of Greenhouse Gas Emissions*, 20 ENV'T & URBANIZATION 539, 543–44 (2008) (suggesting that cities account for only 30% to 40% of emissions, and explaining reasons for variation in estimates).

[17] *See* Part IV.B.

[18] States also face challenges regarding their ability to legally control climate change in the electric sector, which is governed largely at the regional and federal levels. *See* Joel B. Eisen, *Dual Electricity Federalism Is Dead, but How Dead, and What Replaces It?*, 8 GEO. WASH. J. ENERGY & ENVTL. L. (forthcoming 2017) (manuscript at 6) (on file with author) (explaining how recent Supreme Court jurisprudence regarding the Federal Power Act may provide new limitations for state control of emissions from the electricity sector). Such state-level challenges may become more acute following two Supreme Court decisions, issued in the most recent Term, that endorse a broad reach for federal electricity regulation and grant preemptive effects to such regulations. *See* Hughes v. Talen Energy Mktg., LLC, 136 S. Ct. 1288, 1297–98 (2016) (finding that federal law preempted an attempt by Maryland to provide an incentive to locate generation in the state that was conditional on the generator's participation in federal electricity markets); FERC v. Elec. Power Supply Ass'n, 136 S. Ct. 760, 784 (2016) (holding that FERC had authority to regulate any practices "directly affecting" wholesale rates, even if these touched on matters traditionally under state jurisdiction). Nevertheless, cities struggle more than states in controlling emissions because state control over cities is near absolute, whereas federal control over states is constitutionally and statutorily circumscribed. *See* David J. Barron, *Reclaiming Home Rule*, 116 HARV. L. REV. 2257, 2278 (2003) (describing home rule).

increasing their legal leverage over the problem of climate change by drawing more emissions within their control. This expansion raises an underexplored conundrum. Although there is widespread desire for cities to act within their legal authority to reduce carbon pollution, it is a different question entirely whether they should be encouraged to expand this authority by reclaiming ownership or control over tasks currently managed by private entities.[19]

This Article finds good reason for cities' movement in this direction. Leading theorists of outsourcing suggest that it is most appropriate for tasks of "pure operational efficiency," where "the ends are established and it's down to a question of means."[20] Electricity fit this mold reasonably well during the last century, when the primary aim of energy regulation was to supply ample power at low cost—a task regulators easily translated into a mandate for private entities. But climate change creates difficult and inherently political tradeoffs among the goals of reducing carbon, maintaining reliable electricity supply, and preserving the affordability of power.[21] Optimizing these many factors simultaneously is impossible, such that continuous tradeoffs and recalibrations are necessary. Consequently, the ends-means distinction that electricity regulators have relied on for the last century—where clear-cut regulatory goals are translated into established utility rates and responsibilities—no longer functions well. Under these cir-

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[19] In using the term "reclaiming," I do not mean that all cities now considering public ownership at one point in the past provisioned their own electricity. I use "reclaim" to indicate that there is movement back towards the robust debate that preoccupied many thinkers around the turn of the twentieth century as to whether electricity should be publicly or privately provided. *See infra* Section II.B (discussing this debate). However, the applicability of the framework provided by the contracting out literature, in my view, does not hinge on any presupposition that a service was historically publicly provided and has since been contracted out. Instead, this literature provides a general framework for assessing the relative merits of public versus private provisioning.

[20] John D. Donahue, *The Transformation of Government Work: Causes, Consequences, and Distortions*, *in* GOVERNMENT BY CONTRACT: OUTSOURCING AND AMERICAN DEMOCRACY 41, 44 (Jody Freeman & Martha Minow eds., 2009); *see* JOHN D. DONAHUE, THE WARPING OF GOVERNMENT WORK 109 (2008) (suggesting that government should control "custom tasks" that are difficult to pre-specify or evaluate). *But see* Steven J. Kelman, *Achieving Contracting Goals and Recognizing Public Law Concerns: A Contracting Management Perspective* (discussing circumstances in which "contracting creates transaction costs outweighing its product-cost benefits"), *in* GOVERNMENT BY CONTRACT, *supra*, at 153, 156; Lester M. Salamon, *The New Governance and the Tools of Public Action: An Introduction* (explaining how direct governance enhances effectiveness and accountability), *in* THE TOOLS OF GOVERNMENT: A GUIDE TO THE NEW GOVERNANCE 1, 31, 37–38 (Lester M. Salamon ed., 2002).

[21] *See* Jonas J. Monast & Sarah K. Adair, *A Triple Bottom Line for Electric Utility Regulation: Aligning State-Level Energy, Environmental, and Consumer Protection Goals*, 38 COLUM. J. ENVTL. L. 1, 3–4 (2013) [hereinafter Monast & Adair, *Triple Bottom Line*] (exploring "opportunities and challenges to aligning" these goals).

cumstances, outsourcing theory counsels against continued privatization.

The legal academy is not blind to the challenges that climate change poses for regulating electric utilities, and there is widespread agreement that the current model of electricity regulation is inadequate for the task.[22] However, energy law scholars have confined themselves to questions of how to improve the public-private partnership, rather than rethinking it. Two solutions predominate: The first focuses on redesigning energy markets to make them more attuned to the challenges of climate change.[23] The second questions the ability of electricity markets to accomplish an energy transition on the scale that will be necessary to address climate change. Instead, and as most

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[22] *See, e.g.*, *id.* at 4 (proposing a framework to help regulators balance competing objectives); *see also* William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1619 (2014) (arguing that the notion of public utility must be revitalized to meet the challenges of decarbonizing electricity); William Boyd & Ann E. Carlson, *Accidents of Federalism: Ratemaking and Policy Innovation in Public Utility Law*, 63 UCLA L. REV. 810, 814 (2016) (arguing that ratemaking innovations will be critical to promote "technological innovation and deployment" in the electricity grid); Joel B. Eisen, *An Open Access Distribution Tariff: Removing Barriers to Innovation on the Smart Grid*, 61 UCLA L. REV. 1712, 1717 (2014) [hereinafter Eisen, *Open Access*] (asserting that a new "open access" mode of regulation is needed to create a smart electricity network); Emily Hammond & David B. Spence, *The Regulatory Contract in the Marketplace*, 69 VAND. L. REV. 141, 143, 146 (2016) (arguing that energy policy "struggles to reconcile" competing visions for the future of electricity and needs an "integrative framework"); Sharon B. Jacobs, *The Energy Prosumer*, 43 ECOLOGY L.Q. 519, 521 (explaining how consumer-sited generation "challenges traditional energy law paradigms" and creates puzzles within energy law); Daniel A. Lyons, *Federalism and the Rise of Renewable Energy: Preserving State and Local Voices in the Green Energy Revolution*, 64 CASE W. RES. L. REV. 1619 (2014) (charting the difficulty of balancing federal and state regulatory roles in addressing climate change); Inara Scott, *Teaching an Old Dog New Tricks: Adapting Public Utility Commissions to Meet Twenty-First Century Climate Challenges*, 38 HARV. ENVTL. L. REV. 371, 400–12 (2014) (exploring changes needed in the goals and structure of public utility regulation to address climate change).

[23] *See, e.g.*, Christopher J. Bateman & James T.B. Tripp, *Toward Greener FERC Regulation of the Power Industry*, 38 HARV. ENVTL. L. REV. 275, 278 (2014) (urging FERC to incorporate environmental considerations into market design); Eisen, *Open Access*, *supra* note 22, at 1717 (arguing that "a regulatory open access principle will eventually be necessary"); Joel B. Eisen, *FERC's Expansive Authority to Transform the Electric Grid*, 49 U.C. DAVIS L. REV. 1783, 1786 (2016) [hereinafter Eisen, *FERC's Expansive Authority*] (urging FERC to consider adopting a "carbon adder" to market pricing); Hammond & Spence, *supra* note 22, at 193–201 (suggesting several market reforms that would better reflect the grid value of low-carbon energy); John S. Moot, *Subsidies, Climate Change, Electric Markets and the FERC*, 35 ENERGY L.J. 345, 347–48 (2014) (arguing that FERC should focus on reforming subsidies and creating resource neutrality to combat climate change); *see also* STEVEN WEISSMAN & ROMANY WEBB, BERKELEY & ENERGY CLIMATE INST., ADDRESSING CLIMATE CHANGE WITHOUT LEGISLATION: HOW THE FEDERAL ENERGY REGULATORY COMMISSION CAN USE ITS EXISTING LEGAL AUTHORITY TO REDUCE GREENHOUSE GAS EMISSIONS AND INCREASE CLEAN ENERGY USE 2 (2014) (providing an overview of President Obama's Climate Action Plan).

notably articulated by William Boyd, this camp argues for a reinvigoration of the concept of "public utility" *within* electricity regulation, so as to give regulators more capacious authority to regulate privately owned utility companies in the public interest.[24]

In contrast, no scholar has yet devoted attention to the viability of returning to more *public* forms of utility control as a way to effectively govern electric utilities in the climate change era.[25] Robust as outsourcing theory has recently been within administrative law,[26] it has made little mark upon the field of public utility law. Yet one way to think of electricity today is as a long-outsourced function, with private suppliers managed under an elaborate regime of governmental legal control. Reconceptualizing energy regulation in this manner, and transposing onto it important developments in outsourcing theory, gives us new insight into the ideal structure of utility regulation in a climate changed world. And as this Article describes below in Section IV.B, not only bureaucratic theory, but the climate leadership of several municipally owned utilities, suggest the promise that public energy holds. This Article provides a focused examination of Austin,

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[24] *See* Boyd, *supra* note 22; *see also* Boyd & Carlson, *supra* note 22, at 841–77 (charting how various states are using their regulatory authority to experiment on decarbonization initiatives); Brandon Hofmeister, *Roles for State Energy Regulators in Climate Change Mitigation*, 2 MICH. J. ENVTL. & ADMIN. L. 67, 71 (2012) (arguing for an enhanced role for state regulators in addressing climate change); Marc B. Mihaly, *Recovery of a Lost Decade (or Is It Three?): Developing the Capacity in Government Necessary to Reduce Carbon Emissions and Administer Energy Markets*, 88 OR. L. REV. 405, 413 (2009) (expressing skepticism that market reforms can adequately respond to climate change); Monast & Adair, *Triple Bottom Line*, *supra* note 21, at 4 (proposing a "'triple bottom line approach' to state utility regulation" to achieve an alignment of "state energy, environmental, and consumer protection goals within the current regulatory system").

[25] Few recent articles have even addressed municipal power. One notable exception is an article by Uma Outka, accepted for publication around the same time as this one, which also explores the role of city ownership in decarbonizing the grid. *See* Uma Outka, *Cities and the Low-Carbon Grid*, 46 ENVTL. L. 105 (2016). Outka's article provides rich detail on the legal context in which cities are attempting to reclaim ownership, whereas this article focuses on the theoretical context surrounding such city movements. *See id.* For additional (relatively) recent articles that more generally examine municipalization, see Alan Richardson & John Kelly, *The Relevance and Importance of Public Power in the United States*, 19 NAT. RESOURCES & ENV'T 54, 54 (2005), in which the authors discuss the history of public power in the United States and its relevance for the future, as well as Saxer, *Eminent Domain*, *supra* note 9, which explores federal constraints on eminent domain power, and Shelley Ross Saxer, *Government Power Unleashed: Using Eminent Domain to Acquire a Public Utility or Other Ongoing Enterprise*, 38 IND. L. REV. 55 (2005) [hereinafter Saxer, *Government Power Unleashed*], which explores Fifth Amendment, state constitutional, and statutory constraints on eminent domain power. Saxer's work focuses on legal constraints to municipalization. Trisolini and Jacobs both take note of the role of municipalized utilities in addressing climate change, but do not explore the movement in this direction in any detail. *See generally* Trisolini, *All Hands on Deck*, *supra* note 14; Jacobs, *supra* note 22.

[26] *See infra* Section I.A.

but one might also include on this list Sacramento, Seattle, San Antonio, and Burlington.[27] These cities, which have long-municipalized electricity supplies, are leaders and innovators in decarbonizing electricity. Their performance bolsters the theoretical claim that public forms of ownership and control are compelling governance tools for the climate change era.

As discussed so far, my argument might be taken as a step down the road to nationalization: After all, if public ownership is better at the city level, why stop there? I cabin my claims specifically to the local level, as I see publicly controlled utilities as a useful antidote to, and check on, private utilities in a climate changing world, rather than as a realistic whole-cloth replacement. It is worth taking seriously the literature showing that there are efficiency and innovation gains from contracting out and privatization.[28] But climate change causes these gains to be counter-balanced by the need to have at least some publicly controlled models across the country, unimpeded by the myriad challenges of the regulator-regulated relationship, to demonstrate the possibilities that exist for decarbonizing electricity supply. In turn, private competitors can act as a benchmark against which to check the potential inefficiencies of public models.[29] In addition, municipalization and CCA hold another distinct advantage over state or national-level ownership or control: These local efforts harness the remarkable drive of some cities to go beyond the predictions of rational choice theory,[30] and above and beyond their surrounding states and country,

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[27] *See infra* notes 347–53.

[28] *See, e.g.*, William L. Megginson & Jeffry M. Netter, *From State to Market: A Survey of Empirical Studies on Privatization*, 39 J. ECON. LIT. 321, 329–30 (2001) (highlighting economic theory that predicts substantial gains from privatization in competitive and potentially competitive markets); Mary Shirley & Patrick Walsh, *Public Versus Private Ownership: The Current State of the Debate* 52–53 (World Bank, Policy Research Working Paper No. 2420, 2000), http://documents.worldbank.org/curated/en/952171468766218935/pdf/multi-page.pdf (similar).

[29] *Cf.* William J. Novak, *Public-Private Governance: A Historical Introduction*, *in* GOVERNMENT BY CONTRACT, *supra* note 20, at 23, 33 (arguing that the history of U.S. policy shows a need to balance public and private, to check organized power against organized power).

[30] Rational choice theory—the belief that persons make choices based on rational predictions of their expected individual gains—would predict that cities would not act to cut emissions absent credible commitments from other governments. *See, e.g.*, Thomas S. Ulen, *Rational Choice and the Economic Analysis of Law*, 19 LAW & SOC. INQUIRY 487, 492 (1994) (defining rational choice theory); Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change* 5, 10 (World Bank, Policy Research Working Paper No. 5095, 2009) (describing rational choice theory as the basis for collective action theory, which predicts that no one will reduce energy consumption without third-party rule enforcement).

in responding to climate change.[31] In those cities that manifest a political desire to respond to climate change more aggressively than their surrounding jurisdictions, public control or ownership of energy may be a particularly effective tool in accomplishing these objectives. Conversely, many localities with different political predilections will never outperform their states on climate change, irrespective of public control over their electric utility, creating a need for multi-scalar responses.

This Article's primary contribution is to provide the first theoretical examination of public utility ownership as a climate change strategy. In finding ample theoretical support for cities' movements in this direction, it provides reasons for scholars and lawmakers alike to pay more attention to strategies that enhance local ownership and control. In its examination, this Article confines itself specifically to city-centered efforts, neglecting two other "public" forms of utility ownership in the United States: rural electric cooperatives (co-ops) and public power, or public utility, districts (PUDs).[32] I focus on cities because they have taken a decided lead on linking the issues of cli-

[31] CCA and municipalization often have the advantage of being a one-way ratchet: Because states typically subject municipalized cities and CCAs to environmental obligations, cities usually cannot underperform their resident states. *See, e.g.*, Nat'l Renewable Energy Lab., *Renewable Portfolio Standards*, NREL, http://www.nrel.gov/tech_deployment/state_local_governments/basics_portfolio_standards.html (last updated July 6, 2015) (noting that states can choose whether to apply renewable energy targets to municipal utilities and recommending they do so as a best practice).

[32] These ownership structures are similar to municipalization: In them, a community jointly owns and manages its electricity grid, and sometimes also owns—either on its own, or in collaboration with other communities—some generation resources. *See* REGULATORY ASSISTANCE PROJECT, ELECTRICITY REGULATION IN THE US: A GUIDE 13 (2011) [hereinafter RAP]. The primary feature distinguishing co-ops and PUDs from municipally owned utilities is geographic: These alternative forms exist predominantly in rural or partially rural areas. *See* Comment, *Power Districts: An Emerging Device for Low Cost Electricity*, 60 YALE L.J. 483, 485–86 (1951) (explaining that municipal corporations typically serve cities while rural areas were traditionally not served by private or municipal corporations); *see also* Donald G. Balmer, *From Symbiosis to Synergy: A Case Study of Public and Private Electric Power in the Pacific Northwest*, 13 ENVTL. L. 637, 640–41 (1983). As such, these entities serve a much larger geographic area than municipal utilities, but a slightly smaller customer base: As of 2013, cooperatives and public utility districts served about 27% of the population, while owning distribution lines covering three quarters of the nation's landmass. *Maps*, COOPERATIVE.COM, https://www.cooperative.com/public/maps/Pages/default.aspx (last visited Nov. 14, 2016); *U.S. Electric Utility Industry Statistics*, AM. PUB. POWER ASS'N, http://www.publicpower.org/files/PDFs/USElectricUtilityIndustryStatistics.pdf (last visited Jan. 4, 2017) (drawing from Energy Information Administration data). For a different reason, I also exclude federally owned entities, such as the Tennessee Valley Authority and Bonneville Power Administration: These major power generators do not sell directly to consumers. *See, e.g.*, Roger D. Mellem, *Darkness to Dawn? Generating and Conserving Electricity in the Pacific Northwest: A Primer on the Northwest Power Act*, 58 WASH. L. REV. 245, 247 (1983) ("BPA does not sell power directly to consumers."); *TVA at a Glance*, TENN. VALLEY

mate change and local control. However, co-ops and PUDs might hold the same structural promise as municipal ownership as a way to respond to climate change.[33] Indeed, there are early signs that many PUDs and co-ops—whether for political or forward-looking economic reasons—increasingly have similar desires to decarbonize more rapidly than the grid as a whole.[34] Where this is the case, I would anticipate that my arguments regarding the benefits of public ownership in responding to shifting goals would hold.[35]

That said, public ownership—and full municipal ownership in particular—is unlikely to sweep the nation, given the complexities involved and the legal constraints that exist in many states. But state courts, legislatures, and regulators have important roles to play in facilitating local efforts to reclaim control over energy supplies. This

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AUTHORITY, https://www.tva.gov/About-TVA/TVA-at-a-Glance (last visited Nov. 14, 2016) (describing how TVA provides electricity to local power companies).

[33] One potential reason for slower movement from cooperatives and PUDs on addressing climate change is that their boundaries tend not to coincide with other political boundaries, such as city boundaries, with which the populace more readily identifies. In municipalized cities, the electric utility is either directly, or via a separate board, under the control of the city council. *See, e.g.*, *infra* Section IV.B (describing the structure of Austin's municipal utility). The council oversees energy governance not as an independent task, but as part of its larger agenda of building a strong city. *See id.* The boards of cooperatives and utility districts lack this broad mandate, which may create less citizen involvement and less power to plan comprehensively for a low-carbon future. *See id.*

[34] One promising example of a cooperative moving aggressively on climate change is the Kauai Island Utility Cooperative (KIUC), which took over from the private utility in 2002 and has established a goal of 50% renewable energy by 2023. *See* Herman K. Trabish, *IOU, Co-op or Muni? Experts Debate the Creation of Public Utilities*, UTIL. DIVE (Sept. 16, 2016), http://www.utilitydive.com/news/iou-co-op-or-muni-experts-debate-the-creation-of-public-utilities/405511/. However, KIUC's takeover reportedly depended heavily upon "unequivocal cooperation" from the private incumbent, which makes its situation anomalous. *See id.* (describing details of the KIUC takeover). Nevertheless, many other cooperatives now appear to be following suit. *See, e.g.*, Peter Maloney, *Iowa Electric Co-op Looks to Buy RECs to Go "100% Carbon-Free,"* UTIL. DIVE (Apr. 29, 2016), http://www.utilitydive.com/news/iowa-electric-co-op-looks-to-buy-recs-to-go-100-carbon-free/418328/ (noting that more than 90% of U.S. rural electric cooperatives provide electricity from renewable energy sources); Kristen Wright, *Rural Electric Cooperatives Find Renewable Energy Super Star in Solar*, ELEC. LIGHT & POWER (Feb. 17, 2015), http://www.elp.com/articles/print/volume-93/issue-1/sections/renewables-sustainability/rural-electric-cooperatives-find-renewable-energy-super-star-in-solar.html ("As of October, member-owned, nonprofit co-ops had some 95 MW of owned and purchased solar capacity, and they're planning to add some 144 MW more by 2017 for a total of nearly 240 MW in 34 states, according to the National Rural Electric Cooperative Association (NRECA).").

[35] *See, e.g.*, Frank Jossi, *In Midwest, Rural Co-ops Taking a Lead on Community Solar*, MIDWEST ENERGY NEWS (Nov. 11, 2014), http://midwestenergynews.com/2014/11/11/in-midwest-rural-co-ops-taking-a-lead-on-community-solar/ (documenting the popularity of community solar in cooperatives in Kansas, Wisconsin, Michigan, Iowa, and Minnesota, and explaining that "[i]n nearly all cases, the co-ops say they're responding to the demands of their memberships").

Article concludes that these lawmakers should view such efforts not as a repudiation of state authority, but as a set of useful, small-scale experiments with alternative governance models that may prove more capable of effectively mitigating climate change. These experiments may, in turn, help spur innovation within more traditional forms of public-private utility regulation.[36]

Beyond offering lessons for regulatory design within energy law, this Article functions as a cautionary tale within the literature on contracting out. Climate change has radically altered the demands we place upon the electricity sector and our primary aims in regulating it. These changes, in turn, have motivated many cities to reconsider the century-old decision to relinquish control over electricity supply to private companies overseen by state commissions. But reversal of such entrenched institutions and regulatory schema proves politically challenging. The story of cities' struggles to reclaim control over energy as a way to respond to climate change thus adds force to the concerns of many outsourcing critics who question the long-term consequences of contracting out.[37] Two interrelated conclusions emerge: First, we should not assume that government can reliably predict ex ante whether a seemingly straightforward task may become political in the years ahead,[38] such that the calculus of outsourcing changes. And second, if that calculus does change, we should not presume that a task that has been outsourced can easily be reclaimed for direct governmental control.

This Article proceeds in five parts. Part I sketches the contours of modern contracting out theory before turning to describe the century-old decision to "contract out" electricity's provision to private entities, managed under a complex regulatory framework. Part II describes the

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[36] *Cf.* Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 288 (1998) (arguing for greater use of "democratic experimentalism," in which localities experiment in government service provision and central regulators facilitate learning from one another's experimentation).

[37] *See, e.g.*, Nina A. Mendelson, *Six Simple Steps to Increase Contractor Accountability*, *in* GOVERNMENT BY CONTRACT, *supra* note 20, at 241, 242 (expressing concern that contractors, who are not held to the same public and legal accountability regimes as the government, gain "significant discretion to set policy"); Martha Minow, *Public and Private Partnerships: Accounting for the New Religion*, 116 HARV. L. REV. 1229, 1230 (2003) [hereinafter Minow, *Public and Private*] (discussing certain risks of privatization, including allowing actors to bypass regulations and standards that affect public programs).

[38] "Political" in this context means worthy of democratic debate as to purposes. It contrasts with matters of pure instrumental rationality, where goals are established and only the means of implementation are in question. *Cf.* Edward Rubin, *The Possibilities and Limitations of Privatization*, 123 HARV. L. REV. 890, 910 (2010) [hereinafter Rubin, *Possibilities and Limitations*] (reviewing GOVERNMENT BY CONTRACT, *supra* note 20) ("Policy formation represents a choice of goals or values; implementation is a form of instrumental rationality designed to achieve the defined goal in an effective manner.").

significant transition that climate change requires of the electricity sector and outlines options for responding to these challenges. Part III applies theories of contracting out to argue that municipal ownership and CCA may prove superior forms of energy governance for the climate change era. Part IV utilizes a case study of Austin, Texas's municipal utility to examine how this theory translates into practice. Part V discusses the possibilities and limitations that stem from municipalization and CCA's predominantly local character, and considers the state role in these local affairs. The conclusion briefly flips the Article's framework, asking not what energy governance can learn from contracting out theory, but what contracting out theory can learn from energy governance.

I
CONTRACTING OUT: NOW AND THEN

Scholars typically treat electricity law as part of the specialized field of public utility law, which manages the prices and practices of certain private industries of major social importance.[39] Rightly so, given the industry's current structure: Since the early 1900s, private companies have provided the majority of electricity service in the United States.[40] For this reason, electricity provisioning has remained outside the purview of the recent scholarly focus on the advisability of contracting out governmental functions to private entities. But such was not always the case: Electricity law had its own contracting out debate long ago, when fierce public battles erupted over whether cities or private companies should own and manage electricity networks.

Of course, even if this long-ago debate had never existed, there might still be good reasons for cities to now question whether public ownership proves superior to the predominant status quo of regulated private utilities in the climate change era. But it is instructive to understand how our current model came to be, and how the provisioning of electricity has long been viewed as a critical function worthy

[39] *See* Munn v. Illinois, 94 U.S. 113, 126 (1876) (tracing the origin of the concept within U.S. law of private property, which became "clothed with a public interest when used in a manner to make it of public consequence"); *see also* Boyd, *supra* note 22, at 1636–38 ("[*Munn*] is generally viewed as the progenitor of modern public utility law in the United States.").

[40] RICHARD RUDOLPH & SCOTT RIDLEY, POWER STRUGGLE: THE HUNDRED-YEAR WAR OVER ELECTRICITY 43–47 (1986) (describing the rise and domination of several large private electricity companies in the early 1900s); *see also* DAVID SCHAP, MUNICIPAL OWNERSHIP IN THE ELECTRIC UTILITY INDUSTRY: A CENTENNIAL VIEW 9 (1986) (documenting the decrease of municipal power operations in the early 1900s).

of substantial debate as to the appropriate mechanisms of governmental control.

For these reasons, as cities reconsider the propriety of contracting out electricity supply in the era of climate change, it is time to connect the century-old debate over privatizing electricity with the modern literature that has developed to analyze and clarify contracting out decisions. This section provides the background necessary to do so by giving an overview of three topics: the modern literature on contracting out; the history of the decision to contract out electricity in the early 1900s; and the dominant model of contract management that now exists within electricity, public utility law.

A. Contemporary Contracting Out Theory

In their 2009 edited volume *Government by Contract*, Jody Freeman and Martha Minow open with the observation that "we live in an era of pervasive government outsourcing," and go on to trace how the U.S. government has outsourced a sizeable portion of its work to private contractors over the last several decades.[41] Particularly during the 1990s, politicians across the political spectrum embraced contracting out, downsizing, reinvention, privatization, and deregulation as cures for the ills of modern bureaucracy.[42] Concurrently, scholars within administrative law and public policy developed a robust literature addressing when government should provide a service itself, or alternatively contract out the provision to a private entity.[43]

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[41] *See* Jody Freeman & Martha Minow, *Reframing the Outsourcing Debates*, *in* GOVERNMENT BY CONTRACT, *supra* note 20, at 1, 1. Others commentators also note the prevalence of privatization and contracting in modern governments. *See, e.g.*, Megginson & Netter, *supra* note 28, at 321 ("[P]rivatization now appears to be accepted as a legitimate—often a core—tool of statecraft by governments of more than 100 countries."); Paul R. Verkuil, *Public Law Limitations on Privatization of Government Functions*, 84 N.C. L. REV. 397, 399 (2006) (underlining the rapid growth in the "number of private contractors doing the work of government"). However, some scholars trace a longer, less linear pathway to "contracted out" government. *See, e.g.*, Salamon, *supra* note 20, at 1, 7–8 (suggesting that government has long been structured in ways that advocates of "reinventing government" toward privatization envisioned in the 1990s).

[42] *See* Salamon, *supra* note 20, at 8 (acknowledging "third-party government" and those who "[a] half century ago . . . called attention to the rapid innovation in techniques of social intervention"); *see also* Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 3 (1997) (describing regulation as being widely "under attack . . . as inefficient, ineffective, and undemocratic").

[43] *See generally* GOVERNMENT BY CONTRACT: OUTSOURCING AND AMERICAN DEMOCRACY, *supra* note 20 (collecting scholarship analyzing contracting out's ramifications); Verkuil, *supra* note 41, at 418 (describing "[t]he new lexicon of government management" including "'privatization,' 'public and private partnerships,' 'deregulation,' 'downsizing,' and 'self-regulation,'" and discussing some of the ramifications of this new lexicon).

I offer the following overview of the contracting out framework and related public law concerns to organize thinking around the question of whether we are ready to embrace city takeovers of electric utilities as a way to respond to climate change. If we are, then it must be because outsourcing offers limited advantages, or obvious disadvantages, in the context of managing utilities under climate change. If we are not, then scholars, policy makers, and world leaders would be wise to reconsider the celebration of city power that dominates current thinking around how to achieve necessary reductions in carbon pollution.

In either event, the theoretical literature on when to contract out provides a useful analytical frame for this inquiry. One of the leading scholars on this topic, political scientist John Donahue, suggests that "[t]he best candidates for contractual outsourcing satisfy the three straightforward criteria of specificity, ease of evaluation, and competition."[44] Specificity refers to the extent to which a particular function can be specified in detail, in advance.[45] Ease of evaluation, as it sounds, turns on whether the service's delivery can be evaluated early and quickly, as outsourcing does not work well when outcomes are "inherently ambiguous or opaque."[46] And finally, competition refers to the degree of competition that the private entity awarded the contract faces, as outsourcing offers the most efficiency benefits when there is a robustly competitive market.[47] Applying these criteria allows for the separation of "commodity tasks," which "involve discrete, measurable functions" and are therefore appropriately contracted out, from "custom tasks," which are "complex, sophisticated activities that are less suitable for outsourcing."[48]

Other scholars of outsourcing have suggested similar delineations. Trevor Brown and Matthew Potoski, for example, find that the critical factors influencing the government's decision to internalize or externalize production are "service-specific characteristics, the degree of competition for producing the good or service, and goal incongruence between the vendors and the contracting organization."[49] Simi-

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[44] Donahue, *supra* note 20, at 42.

[45] *See id.* at 44.

[46] *See id.* at 45.

[47] *See id.*; *see also* Megginson & Netter, *supra* note 28, at 330 (suggesting that the "justification for privatization" is weakened in the case of "public goods and natural monopolies").

[48] Donahue, *supra* note 20, at 42.

[49] *See* Trevor L. Brown & Matthew Potoski, *Transaction Costs and Institutional Explanations for Government Service Production Decisions*, 13 J. PUB. ADMIN. RES. & THEORY 441, 443–44 (2003). In arriving at their model, Brown and Potoski draw explicitly from transaction cost economics literature that theorized whether private firms should

larly, outsourcing scholar Steven Kelman suggests that "core competencies" should remain within government, as well as tasks that involve uncertainty and asset specificity, where it is hard to develop a contract that covers important demands or to measure where the contracted-for quality has been delivered, and difficult to switch among private competitors once a contract has been awarded.[50]

As the foregoing paragraphs suggest, scholars have reached a fair degree of consensus around key characteristics that make a service appropriate for contracting out. At the same time, public law scholars have raised an additional set of concerns that go beyond these practical considerations. Some worry that contracting out certain functions threatens to erode their symbolic, political significance and to replace deliberative, democratic processes that build a public will with a mass of consumers of services.[51] Similarly, if contracting out is pursued on a large scale through accumulated instances, it may erode government's capabilities and value in ways not made apparent during any particular contracting out decision.[52] Both of these concerns point to the

"make" versus "buy" particular components of their business. *See id.* Other scholars elaborate on the factors influencing this "make" or "buy" decision. *See, e.g.*, Terry M. Moe, *The New Economics of Organization*, 28 AM. J. POL. SCI. 739, 759 (1984) ("The contractual paradigm suggests . . . that government is more likely to prefer the private contracting method when contractor 'types' (reputations, expertise, honesty) are well known, service outputs are easily measured, and negotiations are not plagued by the small-numbers problem."); John Vickers & George Yarrow, *Economic Perspectives on Privatization*, 5 J. ECON. PERSPECTIVES 111, 116 (1991) (emphasizing the importance of competition to performance).

[50] *See* Kelman, *supra* note 20, at 154–57 (drawing these factors from the transaction cost economics work of Oliver Williamson); *see also* Oliver Hart, Andrei Shleifer & Robert W. Vishny, *The Proper Scope of Government: Theory and an Application to Prisons*, 112 Q.J. ECON. 1127 (1997) (developing a framework that generally favors private contracting, but suggests reserving governmental control when there are many opportunities for private contractors to erode quality, strong incentives for public managers to control contracts, and limited competition after a contract has been awarded); David E. M. Sappington & Joseph E. Stiglitz, *Privatization, Information, and Incentives*, 6 J. POL'Y ANALYSIS & MGMT. 567, 568, 574–75 (1987) (asserting that government gains from the lower "residual rights of intervention" under public ownership, which may be important for contracts that are "very complex and subject to frequent change" and where the government is unable to "specify completely its preferences").

[51] *See* Jerry L. Mashaw, *Accountability and Institutional Design: Some Thoughts on the Grammar of Governance* (discussing the problem of "blurring," where state power is delegated to private actors "without customary accountability arrangements for the use of that power"), *in* PUBLIC ACCOUNTABILITY: DESIGNS, DILEMMAS AND EXPERIENCES 115, 135–36 (Michael W. Dowdle ed., 2006); *see also* Minow, *Public and Private*, *supra* note 37, at 1235 (describing concern about private actors using public funds to make critical decisions about traditionally public-controlled programs, which could lead, for example, to fees or restrictions on such activities).

[52] *See* Minow, *Public and Private*, *supra* note 37, at 1235–36 (noting that "[l]ocal, state, and federal governments make numerous but discrete decisions[ ] to subcontract . . . [that] are separated in time and space," often making "patterns of social provision . . . difficult to

conclusion that some "inherently governmental" functions should not be contracted out, irrespective of whether their particular characteristics fit the criteria developed by outsourcing scholars.[53] These concerns have been particularly acute in the contexts of privatized prisons, the delegation of military-related functions to private contractors abroad, and the use of religious organizations to provide basic social services domestically.[54]

Alongside these debates, the privatization and deregulatory revolution also prompted a new wave of inquiry into the murky concept of "accountability." Some suggest that contracting out might enhance accountability; others that it lessens it.[55] Parsing this debate, Jerry Mashaw thoughtfully argues that whether contracting out increases or decreases accountability depends on a more precise understanding of what *kind* of accountability one values.[56] Direct governmental service provision provides accountability via electoral politics and bureaucratic regimes, thereby reinforcing democracy and the rule of law; contracting out provides accountability through the competition of the marketplace, which promotes efficiency above

discern"); Verkuil, *supra* note 41, at 419 ("One can . . . applaud the efficiency-based achievements [of privatization] while questioning its long term consequences.").

53 *See* Gillian E. Metzger, *Privatization as Delegation*, 103 COLUM. L. REV. 1367 (2003) (addressing the constitutional implications of contracting out); *see also* Verkuil, *supra* note 41, at 439 (noting that "inherently governmental functions, which were once thought to be overarticulated, are now increasingly at risk" of being outsourced). *But see* Freeman & Minow, *supra* note 41, at 13 (observing the "instability of the 'inherently governmental' designation").

54 *See, e.g.*, Sharon Dolovich, *How Privatization Thinks: The Case of Prisons* (analyzing privatization in the prison context), *in* GOVERNMENT BY CONTRACT, *supra* note 20, at 128; Martha Minow, *Outsourcing Power: Privatizing Military Efforts and the Risks to Accountability, Professionalism, and Democracy* (focusing on the use of private contractors in the U.S. military), *in* GOVERNMENT BY CONTRACT, *supra* note 20, at 110; Minow, *Public and Private*, *supra* note 37, at 1233 (discussing the policy priority of President George W. Bush to allow religious institutions to provide welfare and social services).

55 *See* John B. Goodman & Gary W. Loveman, *Does Privatization Serve the Public Interest?*, HARV. BUS. REV., Nov.–Dec. 1991, at 26, 38 (describing how, when done right, contracting out can improve public accountability); *cf.* Kelman, *supra* note 20, at 189 (suggesting the best fix for accountability challenges raised by contracting out is to solve the "human capital crisis" in government, to better manage contracts); Mashaw, *supra* note 51, at 134–35 (suggesting that contracting out is "conceptually destabilizing" for notions of accountability); Mendelson, *supra* note 35 (suggesting ways to increase contractor accountability); Paul L. Posner, *Accountability Challenges of Third-Party Government* (arguing that "[t]he major challenge posed by third-party government stems from the diffuse political authority embedded in third-party relationships"), *in* THE TOOLS OF GOVERNMENT, *supra* note 20, at 525.

56 *See* Mashaw, *supra* note 51, at 116–17 (describing the "accountability regimes"); *see also* Edward Rubin, *The Myth of Accountability and the Anti-Administrative Impulse*, 103 MICH. L. REV. 2073, 2113–19 (2005) [hereinafter Rubin, *The Myth*] (critiquing the use of "accountability" as a justification for devolution of authority to private parties).

other values.[57] Neither of these accountability regimes is without faults, so which to choose in a particular context depends on what normative values we want an accountability regime to promote.[58]

All of these concerns—about particular service characteristics, additional public values, and appropriate methods of accountability—are implicated in the emerging debate over how best to govern utilities today, and the role public ownership might play in combating climate change. Part III of this Article applies the scholarship outlined here to reach conclusions on this point. First, however, it is necessary to explain how the United States reached the point where electricity became largely contracted out, and how public utility law attempts to manage the relationship between privately owned electric utilities and their government overseers.

B. Contracting Out Electricity: Municipalization's Rise and Fall

A century before the modern debate over the threats posed by large-scale contracting out of government services, the country was already attuned to the dangers of allowing private companies to deliver electricity. In 1905, Edward Dunne won the mayoralty of Chicago on a platform of "Immediate Municipal Ownership."[59] In New York City, the Tammany Hall political machine barely kept the Municipal Ownership League out of office.[60] Mayors in several other major American cities clinched victory by running on municipalization platforms.[61] And in the academy, prominent legal, economics, and political science scholars fought over municipalization's merits.[62]

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[57] Mashaw, *supra* note 51, at 120–24; *see also* JOHN D. DONAHUE, THE PRIVATIZATION DECISION: PUBLIC ENDS, PRIVATE MEANS 10 (1989) [hereinafter DONAHUE, DECISION] ("[E]fficiency, at base, is merely one aspect of a more fundamental quality—*accountability*.").

[58] Mashaw, *supra* note 51, at 129.

[59] DANIEL T. RODGERS, ATLANTIC CROSSINGS: SOCIAL POLITICS IN A PROGRESSIVE AGE 148 (1998).

[60] *See* Joseph Patrick Sullivan, From Municipal Ownership to Regulation: Municipal Utility Reform in New York City, 1880-1907, at 444–50 (May 1995) (unpublished Ph.D. dissertation, Rutgers University–New Brunswick) (on file with the New York University Law Review) (explaining the shift of union political allegiance during the early 1900s).

[61] *See* DAVID E. NYE, ELECTRIFYING AMERICA 176 (1990) (connecting the election of socialist mayors to the prominence of municipalization); RODGERS, *supra* note 59, at 135–36, 148–49 (describing municipalization mayoral campaigns in New York, Detroit, Chicago, San Francisco, and Cleveland).

[62] *See, e.g.*, William P. Belden, *Governor Pingree and His Reforms*, 34 AM. L. REV. 36, 44–50 (1900) (criticizing past Michigan governor's attempts to bring municipal ownership to Detroit); Carman F. Randolph, *Municipal Ownership of Public Utilities* (pts. 1 & 2), 22 YALE L.J. 355, 461 (1913) (assessing the legal aspects of municipal ownership); *see also* David Nord, *The Experts Versus the Experts: Conflicting Philosophies of Municipal Utility Regulation in the Progressive Era*, 58 WIS. MAG. HIST. 219, 221 (1975) ("Academic experts

Municipalization's appeal came from the increasingly obvious failures of private electricity supply. As electricity became available in the 1880s, multiple private utility companies sprang up to supply electricity within most U.S. cities.[63] To obtain exclusive municipal franchises, these companies negotiated with—and frequently bribed—city council members.[64] With such franchises in place, utilities had little incentive to maintain quality of service.[65]

Municipal ownership, in contrast, eliminated the drive to make a profit and allowed for a broader agenda around electrification.[66] Consequently, its supporters hoped it would lower electricity rates and raise living standards,[67] end bribery of city officials,[68] and increase

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in law and economics . . . played leading roles in developing municipal utility regulation—perhaps the number one issue of municipal reform in the progressive era.").

[63] *See, e.g.*, William J. Hausman & John L. Neufeld, *The Market for Capital and the Origins of State Regulation of Electric Utilities in the United States*, 62 J. ECON. HIST. 1050, 1054 (2002) ("In the Manhattan borough of New York alone, for example, 25 nonexclusive franchises were granted between 1882 and 1900.").

[64] *See, e.g.*, Richard L. McCormick, *The Discovery That Business Corrupts Politics: A Reappraisal of the Origins of Progressivism*, 86 AM. HIST. REV. 247, 258 (1981) (describing how franchise grabs agreed to by city councilmen came under increasing attack during the Progressive Era); Edward F. Dunne, *Our Fight for Municipal Ownership*, THE INDEPENDENT, Oct. 18, 1906, at 927, 930 (observing how corruption had "marked the history of private management of public utilities in Chicago and elsewhere in America"). Sullivan describes how exclusive franchises allowed utilities and political machines to work in tandem in a new "corrupt alliance." Sullivan, *supra* note 60, at 17; *see also* RICHARD HIRSH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM 12–14 (1999) (recounting how corrupt Chicago politicians actively sought cash payments and other favors from private electric companies). Typically, cities had the right within their charter to grant franchises to utility companies, although in some places the right lay with the state. Nord, *supra* note 62, at 223.

[65] *See* Sullivan, *supra* note 60, at 298 (noting that private utilities' safety violations pushed New Yorkers towards municipal ownership).

[66] *See, e.g.*, Walter L. Fisher, *The American Municipality*, *in* MUNICIPAL AND PRIVATE OPERATION OF PUBLIC UTILITIES 33, 42, 184 (1907) (noting the fundamental fact of municipal ownership that the "sole object is not a money profit"); Marshall E. Dimock, *British and American Utilities: A Comparison*, 1 U. CHI. L. REV. 265, 278 (1933) (explaining that the elimination of profit motive should improve service quality).

[67] *See* RODGERS, *supra* note 59, at 142 (linking municipalization movements to hopes that American cities would begin to more closely resemble European cities, which were cleaner and less corrupt).

[68] *See, e.g.*, John R. Commons, *Municipal Electric Lighting*, *in* MUNICIPAL MONOPOLIES 55, 174 (Edward W. Bemis ed., New York, Thomas Y. Crowell & Co. Publishers 1899) ("[N]ine-tenths of the existing municipal corruption and inefficiency result from the policy of leaving municipal functions to private parties . . . ."); George Stewart Brown, *Municipal Ownership of Public Utilities*, N. AM. REV. 701, 701 (1906) ("[M]unicipal ownership is a political necessity [that] will remove the main and most threatening source of political corruption."); Randolph, *supra* note 62, at 359 (explaining how the perception that private ownership of public utilities is inherently corrupt led to support of municipal ownership).

public participation in local government.[69] In these ways, the movement for municipalization was connected with the "home rule" movement, which sought to make cities "active agents of reform" by devolving authority over a wide range of decisions to the local level.[70]

Around the turn of the twentieth century, thousands of cities and towns tried municipal ownership,[71] particularly in those states that clearly permitted it.[72] By 1907, municipal power companies made up 30% of U.S. electricity suppliers,[73] and it looked likely that municipalization would emerge as the preferred utility ownership model.[74] However, beginning that same year, utilities threw their weight behind state regulatory commissions, a model that was considerably more appealing to them than city takeovers of their private businesses.[75] The public looked favorably on state commissions as a different solution to the problem of local utility-government corruption.[76] In 1907, New York and Wisconsin passed legislation giving utility regulatory commissions strong powers to oversee the rates and practices of the

[69] *See, e.g.*, J. Allen Smith, *Effect of State Regulation of Public Utilities upon Municipal Home Rule*, 54 ANNALS AM. ACAD. POL. & SOC. SCI. 85, 87–88 (1914) (making a case against state regulation, as opposed to local regulation, on the grounds that there was no adequate guarantee that power would be exercised "in the interest of the local public for whose protection it is designed").

[70] *See* Barron, *supra* note 18, at 2280 (describing how participants in the late nineteenth-century home rule movement understood the term).

[71] From 1897 to 1907, towns and cities voted to establish between 60 and 120 new municipal electric utilities each year, causing municipally owned electric utilities to grow at twice the rate of private companies. NYE, *supra* note 61, at 179. Of course, many of the places establishing municipal utilities during this time frame were small towns that no private utility had an interest in serving, making public ownership more a matter of necessity than Progressivism in these places. *Id.*

[72] Municipalization was not a natural right of cities; it required state authorizing legislation. *See* Randolph, *supra* note 62, at 473–74 (describing how cities can only municipalize with new authorizing legislation). Some states had broad, general statutes permitting cities to municipalize services of their choice. *See id.* at 467–68 (describing how most municipal utilities are chartered under general laws). In others, cities often faced confusion as to whether municipalization of particular services was permitted, impeding municipalization efforts. *See id.* at 363 (discussing this issue); *see also* DAVID SCHAP, MUNICIPAL OWNERSHIP IN THE ELECTRIC UTILITY INDUSTRY 27 (1986) ("As late as 1912, it was still unclear whether even one-half of the cities in the United States had the legal authority to own public utilities.").

[73] HIRSH, *supra* note 64, at 15.

[74] *See* Forrest McDonald, *Samuel Insull and the Movement for State Utility Regulatory Commissions*, 32 BUS. HIST. REV. 241, 249 (1958) (explaining the popularity of the municipal model in the early 1900s and its subsequent exponential growth).

[75] *Id.* at 250; David J. Hess, *Electricity Transformed: Neoliberalism and Local Energy in the United States*, 43 ANTIPODE 1056, 1064 (2011).

[76] McDonald, *supra* note 74, at 244; Nord, *supra* note 62, at 227–28.

states' private utilities.[77] Other states quickly followed suit: By 1914, two-thirds of states had commissions.[78]

The creation of state commissions did not foreclose the possibility of municipalization: State statutes adopting commissions typically explicitly permitted municipalization as a check on private utility performance.[79] But as a practical matter, the existence of commissions dampened the drive for municipalization. Although many considered state regulation an inadequate substitute,[80] it appeased most former supporters as a reasonable solution to city-level corruption challenges, causing the municipalization movement to lose momentum.[81]

By 1923, the number of municipally owned utilities had peaked.[82] Private systems had distinct advantages when it came to economies of scale, given that municipal utilities were limited to serving local customers within municipal boundaries.[83] To enlarge their service territories and achieve the savings associated with larger-scale generation and transmission systems, private utilities purchased and consolidated the more profitable municipal systems, building major transmission lines to connect their growing holdings.[84] In the following decades, surviving municipal utilities transitioned to purchasing the majority of their power from these more affordable outside sources, rather than generating their own electricity.[85]

Throughout the remainder of the twentieth century, only spotty and typically unsuccessful attempts at municipalization occurred. Although the legal right to municipalize remains in almost every

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[77] *See* Delos F. Wilcox, *Effects of State Regulation upon the Municipal Ownership Movement*, 53 ANNALS AM. ACAD. POL. & SOC. SCI. 71, 71 (1914); *see also* HIRSH, *supra* note 64, at 20–23 (describing the New York and Wisconsin laws as strong ones, which gave their commissions broad jurisdiction).

[78] Wilcox, *supra* note 77, at 71.

[79] Or, some states adopted "home rule" statutes that reserve for municipalities all powers not explicitly exercised by the state government, in which case municipalization is presumptively allowed. *See* ABBY BRIGGERMAN, RADU COSTINESCU & ASHLEY BOND, AM. PUB. POWER ASS'N, SURVEY OF STATE MUNICIPALIZATION LAWS (2012) (examining each state's municipalization policy).

[80] *See* Barron, *supra* note 18, at 2317 (describing home rulers' emphasis on local democracy as a central component of cities' welfare).

[81] *See* Sullivan, *supra* note 60, at 451; *see also* Wilcox, *supra* note 77, at 72 (noting the three types of support for state regulation).

[82] *See* SCHAP, *supra* note 72, at 9–11, 35, 53.

[83] *See* RUDOLPH & RIDLEY, *supra* note 40, at 43 (describing the financial clout of private holding companies).

[84] *See id*. at 42–48 (chronicling the rise of private utility companies and their business growth strategies).

[85] *See* SCHAP, *supra* note 72, at 97 (showing that 1151 out of 2033 municipal electric systems purchased all of their power in 1950).

state,[86] localities only really mobilized to municipalize electric services in notable numbers during the period following electricity price spikes in the 1970s and 1980s.[87] Between 1947 and 1996, 125 new electric municipal systems formed.[88] At the same time, however, the advent of "power pooling"—the linking up of transmission lines between regions—encouraged further utility acquisitions of municipal systems, as utilities exploited ever-greater economies of scale.[89] For this reason, even though municipalization efforts rose during the 1970s and into the 80s, the overall number of municipal utilities remained stable.[90]

A second, smaller wave of municipalization occurred around a decade later, following 1992 changes in federal law that required utilities to allow power purchased by other entities to cross their transmission lines.[91] These changes made it easier for cities to purchase cheap wholesale electricity from outside sources, increasing the appeal of municipalization.[92] Between 1993 and 1997, many cities seriously considered municipalization, although only a handful completed the process.[93] The obstacles to municipalizing—including utility opposition and the legal requirement that cities help fund previously incurred utility infrastructure costs and contractual obligations that benefitted their residents—proved too substantial for most localities.[94]

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[86] *See* BRIGGERMAN, COSTINESCU & BOND, *supra* note 79, at 6, 22 (finding statutory right to municipalize in every state except Hawaii, which is silent on the matter, and Rhode Island, which requires specific legislative authority).

[87] These price spikes were caused largely by increases in the price of oil and significant cost overruns in building nuclear reactors. *See* RUDOLPH & RIDLEY, *supra* note 83, at 196–97 (describing the problem and noting that electricity prices went up in the Northeast by 50% due to oil price increases in 1973).

[88] Michael J. Doane & Daniel E. Spulber, *Muncipalization: Opportunism and Bypass in Electric Power*, 18 ENERGY L.J. 333, 351 (1997).

[89] RUDOLPH & RIDLEY, *supra* note 83, at 119.

[90] SCHAP, *supra* note 72, at 94.

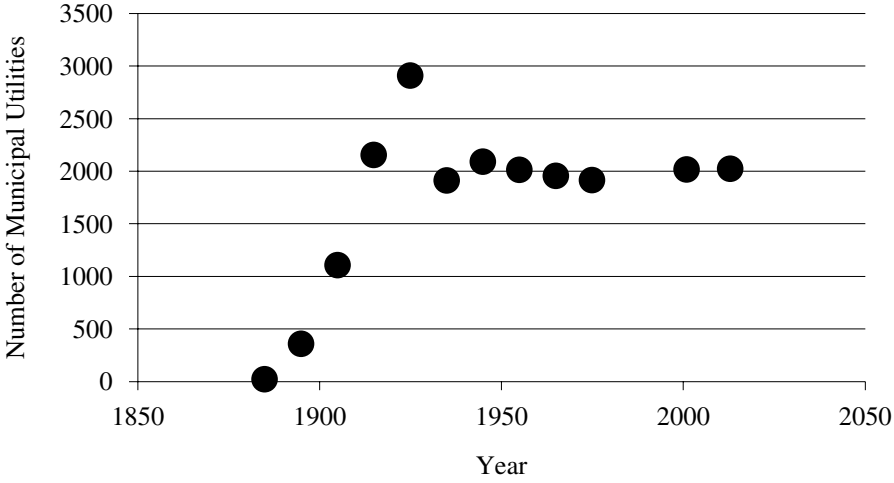
[91] Energy Policy Act of 1992, 16 U.S.C. §§ 824j–824k (2012); Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 18 C.F.R. §§ 35, 385 (1996) (requiring utilities to provide transmission services at rates and at terms and conditions comparable to rates provided by the utility itself); *see also* James R. Pierobon, *Welcome, Public Power, to Deregulation*, PUB. UTIL. FORT., Sept. 15, 1994, at 19, 19 ("The 'walls' that have traditionally divided investor-owned utilities (IOUs) and public power agencies are beginning to fall.").

[92] Kelly, *supra* note 9, at 49 (providing examples of cities purchasing power from power brokers); *see also* Saxer, *Government Power Unleashed*, *supra* note 25, at 70 (detailing two municipalization efforts in Oregon that were precipitated by the Enron scandal and sought to lower rates and provide reliable service).

[93] Kelly, *supra* note 9, at 43. Writing in 1997, Kelly found that two cities had completed municipalization, six had rejected it, and the remainder were still considering it. *Id.*

[94] In several cases, cities considered "muni lite," or what some disparagingly called "sham municipalization," wherein the city would purchase just enough of its distribution grid to be considered a public utility. City of Palm Springs, 76 FERC 61,127, 61,699 (1996)

FIGURE 1. NUMBER OF MUNICIPAL UTILITIES IN THE U.S. IN SELECTED YEARS, 1885–1975[95]



In 1950, there were 2033 municipal electric systems in the United States.[96] That overall number has remained remarkably stable ever since.[97] Today, 2028 municipally owned systems serve around 14.4% of U.S. residential electricity customers.[98] Small towns own the vast majority of such systems, but Seattle, Los Angeles, Cleveland, Austin, San Antonio, and two dozen other cities with populations over 100,000 also have municipalized systems.[99] These numbers show that although public power has a solid foothold in the electricity industry,

(describing the attempts of the City of Palm Springs to engage in this practice). This option was particularly appealing in areas where the private utility had pre-existing high-cost contracts that the municipality wanted to avoid by purchasing power in the newly opened wholesale market. *Id.* at 61,702–03 (denying an attempt by Palm Springs to engage in "muni lite"); Kelly, *supra* note 9, at 53 (discussing implications of the *City of Palm Springs* FERC decision); *see also* Doane & Spulber, *supra* note 88, at 338 (describing various means through which municipalities attempt to evade competition transitions charges for stranded costs, including engaging in "muni lite").

95 SCHAP, *supra* note 72, at 35, 53, 97; ENERGY INFO. ADMIN., ELECTRIC POWER ANNUAL 2001, at 2 (2003), https://www.eia.gov/electricity/annual/archive/03482001.pdf; *Public Power Statistics*, APPA: AM. PUB. POWER ASS'N, http://www.publicpower.org/About/interiorsidebar.cfm?ItemNumber=38733&navItemNumber=38732 (last visited Nov. 5, 2016).

96 SCHAP, *supra* note 72, at 97.

97 *Id.* at 87.

98 *See* AM. PUB. POWER ASS'N, PUBLIC POWER: SHINING A LIGHT ON PUBLIC SERVICE 2 (2014), http://www.publicpower.org/files/PDFs/PPFactSheet.pdf (noting that 1400 systems are in towns of fewer than 10,000 residents).

99 *See* Diane Moody, Paul Zummo & Mark Beauchamp, *Public Power by the Numbers*, ELECTRICITY J., July 2013, at 85, 87; Delia Patterson, *Public Power: Relevant Then, Relevant Now*, ELECTRICITY J., July 2013, at 91, 91. Many states allow the formation of Joint Action Agencies, which agglomerate municipalities into larger agencies to achieve

it lost its democratic momentum during the latter half of the twentieth century.

C. State Regulation's Long and Evolving Reign

In contrast, the state commission model that states flocked to during the early 1900s has proven to be an enduring regulatory design. Today, all fifty states have public utilities commissions (PUCs),[100] each of which closely oversees the state's investor-owned utilities.[101] Since the 1930s, as electricity companies expanded beyond state boundaries, state PUCs have shared jurisdiction over electricity with the Federal Energy Regulatory Commission (FERC),[102] which oversees interstate "wholesale" energy sales—that is, sales of electricity between utilities—and interstate transmission.[103] Under this model, commissions establish the rates that private utility companies are allowed to charge consumers, with a mandate that the rates be "just and reasonable."[104] In exchange, utilities receive a monopoly service territory that protects them from competition and are allowed to recoup all "prudent" infrastructure investments, plus a commission-determined rate of return, from their ratepayers.[105]

Scholars have long raised concerns regarding the challenges of "harnessing"[106] private enterprise under the commission model.[107] As

economies of scale and make public ownership of generation more feasible. *See* Moody, Zummo & Beauchamp, *supra*, at 86.

[100] These are also referred to in various states as Public Service Commissions or Corporation Commissions. Every state in the country, with the exception of Delaware, enacted legislation establishing such a commission between 1907 and 1930. *See* Boyd & Carlson, *supra* note 22, at 823. Delaware followed suit in 1949. *See About the Public Service Commission*, DEL. PUB. SERV. COMM'N, http://depsc.delaware.gov/about.shtml (last visited Nov. 5, 2016); *see also Regulatory Commissions*, NAT'L ASS'N REG. UTIL. COMM'NS, http://www.naruc.org/about-naruc/regulatory-commissions/ (last visited Nov. 5, 2016) (containing links to key information about the regulatory commission of each state).

[101] *See* RAP, *supra* note 32, at 20 (2011) (providing an overview of the role of the regulatory commission). In most states, statutes exempt public power (including cooperatives and municipalized utilities) from commission oversight. *Id.* at 23.

[102] *See* Federal Power Act of 1935, 49 Stat. 838 (1935) (codified as amended in scattered sections of 16 U.S.C.) (creating the Federal Power Commission). The Federal Power Commission became the Federal Energy Regulatory Commission after the passage of the Department of Energy Organization Act in 1977. Department of Energy Organization Act, Pub. L. No. 95-91, §§ 204, 401–07, 91 Stat. 565, 571, 582–87 (codified as amended in scattered sections of 42 U.S.C.).

[103] 16 U.S.C. § 824(a) (2012).

[104] RAP, *supra* note 32, at 31.

[105] *See* CHARLES F. PHILLIPS, JR., THE REGULATION OF PUBLIC UTILITIES 118–19 (1993) (describing regulation as requiring a "break-even constraint" that gives firms adequate financial incentives to keep supplying the good or service desired).

[106] Boyd, *supra* note 22, at 1619.

[107] *See, e.g.*, Horace M. Gray, *The Passing of the Public Utility Concept*, 16 J. LAND & PUB. UTIL. ECON. 8, 11 (1940) (noting that both regulators and courts favored utilities

early as 1914, one scholar reported that "a great many are coming to fear that the commissions . . . are primarily organs of the public utility interests to protect themselves from the mosquito-bites of rampant democracy"—i.e., municipalization efforts.[108] Utilities, as private companies beholden to their shareholders, naturally want to earn as much profit as possible. Regulators want to keep prices charged to consumers low, while also guaranteeing that the utilities are financially healthy enough to provide a reliable supply of power into the future.[109] Within this relationship, the utility has incentives to convince the regulator to overbuild infrastructure (upon which it earns a rate of return).[110] And the utility typically has informational and expertise advantages in working with a commission to establish its costs and the system's infrastructure needs.[111] These asymmetries cause even the most scrupulous regulators to work at a disadvantage compared to the utilities they regulate. Further complicating the picture, scholars have frequently accused commissions of being susceptible to capture by the utilities they are charged with regulating.[112]

In response to these concerns, and in keeping with the outsourcing and deregulatory movement described in Part I, scholars and

during the 1930s); Comment, *supra* note 32, at 484–85 (calling regulation a "weak substitute" for more public forms of utility governance).

[108] Wilcox, *supra* note 77, at 75; *see also* WILLIAM E. MOSHER ET AL., ELECTRICAL UTILITIES: THE CRISIS IN PUBLIC CONTROL 1 (1929) (noting that opponents of the commission model were motivated by this concern); Gray, *supra* note 107, at 15 (asserting commissions had become "a device to protect the property, i.e., the capitalized expectancy, of these monopolists from the just demands of society").

[109] *See* RAP, *supra* note 32, at 36 (explaining the types of costs that the regulator will allow the utility to recover).

[110] *See* Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052, 1059 (1962) (observing that a firm has an incentive to acquire additional capital if the allowable rate of return exceeds the cost of capital); *see also* Paul L. Joskow, *Regulation of Natural Monopoly* (describing the theory and importance of the Averch-Johnson model) [hereinafter Joskow, *Natural Monopoly*], *in* HANDBOOK OF LAW & ECONOMICS 1227, 1298–1300 (A. Mitchell Polinsky & Steven Shavell eds., 2007).

[111] *See* Joskow, *Natural Monopoly*, *supra* note 110, at 1300 (describing the Averch-Johnson model, but contending that it relies upon "extreme" assumptions about the level of information asymmetries).

[112] *See, e.g.*, Gray, *supra* note 107, at 15 (noting that public policy is often driven by private interests); Jim Rossi, *Public Choice, Energy Regulation and Deregulation* (observing that there have been studies taking both sides on whether utility regulation is affected by industry capture, and noting that rent seeking can occur among competitive firms as well), *in* RESEARCH HANDBOOK ON PUBLIC CHOICE AND PUBLIC LAW 419, 421–22 (Daniel A. Farber & Anne Joseph O'Connell eds., 2010); George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 3 (1971) (arguing that, generally, industry seeks regulation and benefits from it); *see also* James E. Anderson, *The Public Utility Commission of Texas: A Case of Capture or Rapture?*, 1 POL'Y STUD. REV. 484, 488–89 (1982) (charting how the Texas PUC became "enraptured" with the industry it regulated).

regulators have encouraged greater reliance on market forces, in place of regulatory oversight, over the past several decades.[113] This shift in strategy has wrought major but patchy movement towards what some call "deregulation," and others "restructuring," within the electricity industry.[114] Many states have required transmission and distribution utilities to divest their electric generation assets.[115] These generators now submit bids for the price at which they will sell their electricity into FERC-overseen regional wholesale electricity markets, or sell their generation via forward contracts with utilities.[116] Market participation, however, is optional.[117] Some utilities, particularly those concentrated in the southeast and west, have opted not to join regional markets.[118]

To add a further layer to this complex jurisdictional picture, fifteen states and the District of Columbia have also deregulated the *retail* market for electricity, by creating what is frequently referred to as "retail choice."[119] In these states, customers are free to select their electricity supplier from a range of competitors offering different rates and packages, instead of automatically being served by a single utility given a monopoly over their service territory.[120]

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[113] *See* Boyd, *supra* note 22, at 1663–72 (chronicling this transformation).

[114] Electricity differs from many markets because it requires perfect, second-by-second balancing of supply and demand, such that markets require significant oversight institutions—hence, the terminological battle. *See* James M. Griffin & Steven L. Puller, *Introduction* to ELECTRICITY DEREGULATION: CHOICES AND CHALLENGES 1, 5–10 (James M. Griffin & Steven L. Puller eds., 2005); *see also* Alvin K. Klevorick, *The Oversight of Restructured Electricity Markets* (describing how regulatory oversight remains an important characteristic of the restructured electricity industry), *in* ELECTRICITY DEREGULATION, *supra*, at 297, 298.

[115] *See* Severin Borenstein & James Bushnell, *The U.S. Electricity Industry After 20 Years of Restructuring*, 7 ANN. REV. ECON. 437, 441 (2015) (explaining the shift in generation to a market-based model). "Independent Power Producers" produced just under 35% of electricity in the United States in 2012, up from 1.6% in 1997. *Id.* at 441–42.

[116] These markets are run by "Regional Transmission Organizations" (RTOs), or "Independent System Operators" (ISOs), which are regional bodies that control transmission planning and operations for participating utilities, and also administer wholesale electricity markets. *See* Michael H. Dworkin & Rachel Aslin Goldwasser, *Ensuring Consideration of the Public Interest in the Governance and Accountability of Regional Transmission Organizations*, 28 ENERGY L.J. 543, 551–54 (2007) (providing an overview of RTOs).

[117] FERC has stopped short of mandating RTO membership, perhaps due to concerns over jurisdictional limits. *See* 18 C.F.R. § 35.34(d) (2016) (describing RTO membership as optional).

[118] Paul L. Joskow, *The Difficult Transition to Competitive Electricity Markets in the United States* [hereinafter Joskow, *Difficult Transition*], *in* ELECTRICITY DEREGULATION: CHOICES AND CHALLENGES, *supra* note 114, at 31, 32.

[119] *Status of Electricity Restructuring by State*, U.S. ENERGY INFO. ADMIN. (Sept. 2010), http://www.eia.gov/electricity/policies/restructuring/restructure_elect.html.

[120] In these states, regulated utilities are still in charge of distribution. In most states, however, retail choice has resulted in limited movement away from the historical

In sum, we are at an interesting and messy crossroads with respect to electric utility regulation: Some states retain traditional oversight of vertically integrated utilities, which continue to own transmission, distribution, and generation resources.[121] Some states belong to regional markets that supply wholesale electricity to their state-regulated utilities;[122] and some states have deregulated generation and supply, retaining control only over distribution utilities.[123] It is unclear whether the United States has reached a point of stasis with respect to these three models, or whether continued evolution towards market-dominated models is likely.[124] What is clear is that cities' desires to act on climate change are opening up long-closed debates over how these models stack up next to the previously marginalized option of municipal ownership.

II
Electricity Governance Under Climate Change

To fully understand the debate over whether publicly or privately owned electricity systems can best manage the transition necessitated by climate change, one must first understand what decarbonization demands of our electricity systems. This Part begins by describing that challenge. It then discusses the divergent ways in which electricity governance might rise to meet it: through regulatory reform via either smarter markets or reinvigorated public utility law; or through greater reliance on public control and ownership via municipal ownership and community choice aggregation. With this foundation in place, the next

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monopoly suppliers. *See State Electric Retail Choice Programs Are Popular with Commercial and Industrial Customers*, U.S. Energy Info. Admin. (May 24, 2012), http://www.eia.gov/todayinenergy/detail.cfm?id=6250#tabs_RenewablesMaps-3 (describing how some customers have switched to competitive suppliers).

121 Most states in the Southeast and many in the West fall into this traditional category. *See Status of Electricity Restructuring by State*, *supra* note 119 (mapping the status of states with respect to electricity restructuring); *see also* Boyd & Carlson, *supra* note 22, at 835–36 (noting that twenty states fall into this category).

122 "Twelve states, including most of the Midwest and mid-Atlantic states and California, operate with a hybrid model that combines competitive wholesale electricity markets with the traditional IOU franchise at the retail level." Boyd & Carlson, *supra* note 22, at 838. For a map of states belonging to regional markets, see *Regional Transmission Organizations (RTO)/Independent System Operators (ISO)*, Fed. Energy Reg. Commission (July 18, 2016), http://www.ferc.gov/industries/electric/indus-act/rto.asp.

123 Boyd & Carlson, *supra* note 22, at 837 ("Together with Washington, D.C., sixteen states, largely in the Northeast and Texas, fall into this category."). For more detail on our tripartite U.S. electricity system, see *id.* at 835–39, and Hammond & Spence, *supra* note 22.

124 *See* Boyd & Carlson, *supra* note 22, at 815–18 (arguing that continued divergence might be normatively desirable for producing climate-related innovation).

Part returns to the literature on contracting out to plumb that theory for insights on the relative prospects for these governance options.

A. Climate Change and Electricity

The United States cannot adequately respond to climate change without transforming our electricity system, which contributes nearly one-third of U.S. carbon pollution—more than any other sector.[125] In 2009, global leaders agreed to a goal of limiting planetary warming to two degrees Celsius in order to avert the worst consequences of climate change.[126] At the most recent climate change negotiations in December 2015 in Paris, amid growing concern about intolerably severe consequences at even two degrees of warming,[127] countries pledged to strive to limit aggregate emissions "to *well below* 2°C above pre-industrial levels."[128]

To meet the two-degree Celsius target would require almost complete decarbonization of developed country economies by 2050.[129] This, in turn, would likely require almost eliminating emissions from electricity while electrifying two other polluting segments of our economy: transportation and heating.[130] To accomplish this aim, electricity generation would need to approximately double by 2050, while carbon emissions from electricity would need to be reduced to 3 to

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[125] *Sources of Greenhouse Gas Emissions: Electricity Sector Emissions*, U.S. ENVTL. PROTECTION AGENCY, http://www3.epa.gov/climatechange/ghgemissions/sources/electricity.html (last updated Oct. 6, 2016).

[126] *See* U.N. Framework Convention on Climate Change, *Report of the Conference of the Parties on its Fifteenth Session*, at 5, U.N. Doc. FCCC/CP/2009/11/Add.1 (Mar. 30, 2010) (reproducing the Copenhagen Accord of December 18, 2009).

[127] *See, e.g.*, James Hansen et al., *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, PLOS ONE, Dec. 2013, at 1, 2 ("[T]here are already clear indications of undesirable impacts at the current level of warming and . . . 2°C warming would have major deleterious consequences.").

[128] Paris Agreement Under the United Nations Framework Convention on Climate Change art. 2.1(a), Dec. 12, 2015, T.I.A.S. No. 16-1104 (further agreeing to "pursu[e] efforts to limit the temperature increase to 1.5 °C above pre-industrial levels").

[129] JAMES H. WILLIAMS ET AL., ENERGY & ENVTL. ECON., INC., 1 U.S. 2050: PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES 1 (rev. ed. 2015), http://deepdecarbonization.org/wp-content/uploads/2015/11/US_Deep_Decarbonization_Technical_Report.pdf; *see also* Ottman Edenhofer et al., *Summary for Policymakers* (concluding that reaching a maximum of two degrees of warming will require reductions of energy emissions from the energy supply sector of "90% or more below 2010 levels between 2040 and 2070"), *in* WORKING GRP. III, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE at 1, 18 (Ottmar Edenhofer et al. eds., 2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policy makers.pdf.

[130] *See* WILLIAMS ET AL., *supra* note 129, at xv, 25.

10% of current levels.[131] Although the United States seems unlikely to agree to this level of decarbonization at the national level soon, many states and cities are taking on the challenge: As one indication, 166 subnational jurisdictions, representing over 1.09 billion people, have signed an "Under 2 MOU [Memorandum of Understanding]" jointly committing to reduce their emissions 80 to 95% below 1990 levels by 2050.[132] And 1060 mayors signed the less demanding U.S. Mayor's Climate Protection Agreement,[133] which committed cities to striving to achieve the Kyoto Protocol's aim of reducing emissions 7% below 1990 levels,[134] even though the United States failed to ratify the treaty.

Electricity regulators have difficult decisions to make regarding how best to decarbonize electricity to meet these targets.[135] Market forces alone are exceedingly unlikely to push electricity towards cleaner sources in the time frame demanded, given that carbon pollution is a classic—and indeed, as Richard Lazarus terms it, "super-wicked"—externality.[136] Carbon pollution's "super-wickedness" stems from the fact that its costs are borne by the global population, especially the future global population, while the benefits of uncontrolled emissions accrue more locally and immediately.[137] Accordingly, there is widespread agreement that some sort of legal regime will be necessary to achieve rapid decarbonization—at which point,

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131 *Id.* at xv.

132 *The Memorandum of Understanding (MOU) on Subnational Global Climate Leadership*, UNDER 2 MOU, http://under2mou.org/the-mou/ (last visited Feb. 8, 2017) (reporting that 167 jurisdictions from thirty-two countries and six continents have signed the MOU). *See also Status of Ratification of the Kyoto Protocol*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php (last visited Feb. 8, 2017) (showing that the U.S. signed but did not ratify the protocol).

133 *See List of Participating Mayors*, U.S. CONF. MAYORS CLIMATE PROTECTION CTR., http://www.usmayors.org/climateprotection/list.asp (last visited Jan. 4, 2017).

134 *See The U.S. Mayors Climate Protection Agreement*, U.S. CONF. MAYORS CLIMATE PROTECTION CTR. 1, http://www.usmayors.org/climateprotection/documents/mcpAgreement.pdf (last visited Jan. 4, 2017).

135 *Cf.* Cinnamon Carlarne, *Delinking International Environmental Law & Climate Change*, 4 MICH. J. ENVTL. & ADMIN. L. 1, 51 (2014) ("[W]hile it is increasingly clear that significant changes in the energy sector are necessary to curb climate change, it is less clear that any major state or regional players know how to achieve those changes in ways that are technologically, economically, and politically feasible.").

136 *See* Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1160 (2009) (arguing that climate change belongs in the category of "super wicked" problems because "the longer it takes to address the problem, the harder it will be to do so" and "those who are in the best position to address the problem are not only those who caused it, but also those with the least immediate incentive to act within that necessary shorter timeframe").

137 *See id.* at 1160–61 (noting additionally the absence of a global regulator).

the relevant questions become what technologies might be available to achieve decarbonization, and what legal frameworks can best induce their uptake. This Section focuses on technological options; the next three discuss possible legal frameworks.

Significant emissions reductions will likely require a combination of strategies. One important component—often dubbed the "low-hanging fruit" of emissions reductions[138]—will be energy efficiency. U.S. states have already taken significant steps to promote energy efficiency, causing energy savings to increase around 17% per year from 2006 to 2011.[139] Nevertheless, experts suggest that U.S. households may still have untapped savings opportunities amounting to 16 to 20% of current energy demand.[140] Additional opportunities exist for more "demand response" policies, which focus on cutting energy demand at peak periods, thereby lessening the need for new electricity infrastructure.[141]

But energy efficiency and demand response cannot function as stand-alone policies, given the depth of emissions reductions necessary. To significantly reduce greenhouse gas emissions, electricity production will have to shift from predominantly fossil fuel based, to renewable or non-carbon sources, each with its own benefits and drawbacks.

Renewable energy options include "distributed" small-scale renewable generation, like rooftop solar panels, large utility-scale wind farms and solar arrays, and major hydropower projects. The optimal response to climate change is likely to include a combination of large- and small-scale sources, both of which are becoming much more affordable.[142] Renewable energy accounted for 69% of all

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138 *See, e.g.*, PETER SERIAN ET AL., MOVING BEYOND LOW HANGING FRUIT: SUCCESSFUL ENERGY EFFICIENCY PROGRAM OUTREACH STRATEGIES FOR COMMERCIAL FACILITIES 5-294 (2014), http://aceee.org/files/proceedings/2014/data/papers/5-542.pdf (arguing that the next generation of energy efficiency strategies will have to go beyond the "low hanging fruit" approaches that have characterized the sector in the past).

139 *See* DAVID FRANKEL, STEFAN HECK & HUMAYUN TAI, MCKINSEY & CO., SIZING THE POTENTIAL OF BEHAVIORAL ENERGY-EFFICIENCY INITIATIVES IN THE US RESIDENTIAL MARKET 1 (2013).

140 *See id.* at 2 exhibit 2 (charting the savings opportunities by sector).

141 Joel B. Eisen, *Who Regulates the Smart Grid? FERC's Authority over Demand Response Compensation in Wholesale Electricity Markets*, 4 SAN DIEGO J. CLIMATE & ENERGY L. 69, 76 (2013) (citations omitted) ("According to one recent study, well over 100 gigawatts of economic [demand response capacity] is available nationwide. This enormous amount is equivalent to the capacity of hundreds of new fossil fuel-fired plants.").

142 *See* MARK BOLINGER & JOACHIM SEEL, LAWRENCE BERKELEY NAT'L LAB., UTILITY-SCALE SOLAR 2015: AN EMPIRICAL ANALYSIS OF PROJECT COST, PERFORMANCE, AND PRICING TRENDS IN THE UNITED STATES, at i (2016), https://emp.lbl.gov/sites/all/files/lbnl-1006037_report.pdf ("Median installed PV project prices within a sizable sample have steadily fallen by nearly 60% since the 2007-2009 period."); *see also* GALEN BARBOSE &

power capacity installed in the United States in 2015,[143] and the U.S. Energy Information Administration projects that renewable generation, particularly wind and solar, will continue to grow substantially in the coming decades—between 50% and 121% by 2040 under current policies alone.[144] However, significant reliance on renewables also presents technological challenges, as the variability of energy produced from the wind and sun creates difficulties in integrating these sources into electricity markets and the grid while maintaining reliability.[145]

Two other carbon-free options for producing electricity are nuclear energy- and fossil fuel–powered generation combined with "carbon capture and storage" (CCS), a technology added onto generation plants that captures carbon dioxide emissions and injects them deep underground for long-term storage.[146] The extent to which each of these technologies might play a role in efforts to decarbonize electricity remains an open question. Particularly after the devastating consequences of nuclear plant failings in Japan following a 2011 tsunami,[147] nuclear energy faces significant renewed concern over the severity of the risks it poses in the low-probability event of an accident.[148] However, these risks must be weighed against its countervailing benefit as a predictable source of carbon-free electricity.[149] Notably, the U.S. Environmental Protection Agency chose to include

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NAÏM DARGHOUTH, LAWRENCE BERKELEY NAT'L LAB., TRACKING THE SUN IX: THE INSTALLED PRICE OF RESIDENTIAL AND NON-RESIDENTIAL PHOTOVOLTAIC SYSTEMS IN THE UNITED STATES 1 (2016), https://emp.lbl.gov/sites/all/files/tracking_the_sun_ix_report_0.pdf (noting that 2015 "continue[d] the steady downward trend in PV system pricing, though the pace of decline [was] somewhat slower than in recent years").

143 Zachary Shahan, *Renewables = 69% of New US Electricity Capacity in 2015*, CLEAN TECHNICA (Feb. 15, 2016), https://cleantechnica.com/2016/02/15/renewables-69-of-new-us-electricity-capacity-in-2015/.

144 U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2015, at 25 (2015), http://www.eia.gov/forecasts/aeo/pdf/0383(2015).pdf.

145 *See* David B. Spence, *Regulation, Climate Change, and the Electric Grid*, 3 SAN DIEGO J. CLIMATE & ENERGY L. 267, 270 (2012) (cataloguing the challenges "associated with integrating intermittent, renewable sources of electric generation into the grid").

146 *See generally* Victor K. Der, *Carbon Capture and Storage: An Option for Helping to Meet Growing Global Energy Demand While Countering Climate Change*, 44 U. RICH. L. REV. 937, 951 (2010) (discussing the technology, its potential, and challenges for reducing carbon dioxide emissions).

147 *See generally* Lincoln L. Davies, *Beyond Fukushima: Disasters, Nuclear Energy, and Energy Law*, 2011 BYU L. REV. 1937 (discussing the potential implications of the Fukushima nuclear disaster for U.S. energy law); Evan Osnos, *The Fallout*, NEW YORKER (Oct. 17, 2011), http://www.newyorker.com/magazine/2011/10/17/the-fallout (discussing the reaction to Fukushima in Japan).

148 *See* Hammond & Spence, *supra* note 22, at 178–84 (discussing the added cost of nuclear energy stemming from perceptions of its risk).

149 *See id.* at 173–74 (comparing nuclear power favorably to coal-fired power in terms of externalities).

new nuclear energy as one method for states to utilize in complying with the Clean Power Plan,[150] and a few states are proceeding to build new nuclear reactors.[151]

CCS is just beginning to reach commercial-scale deployment,[152] and some experts question whether it is ever likely to play a significant role in reducing U.S. emissions, given its costs.[153] Currently, the Department of Energy is providing incentives for several demonstration CCS plants,[154] but these have faced frustrating cost overruns during construction.[155] Nevertheless, the latest findings by leading experts suggest that it will be difficult to reach sustainable levels of emissions globally without the use of this technology, as it remains "the sole practical option to achieve considerable CO_2 emission reductions from fossil-fueled power plants."[156]

As this brief overview suggests, policy makers and regulators face a complicated set of questions regarding how to move forward on decarbonization. Some of the most promising technologies remain experimental and in need of regulatory support, and no technology is without drawbacks. To further complicate the picture, these decisions must be made under the knowledge that climate change will create differing future conditions, including amplified risk of disasters and droughts, which will affect the relative desirability of future energy

150 The Clean Power Plan, if it proceeds would allow states to use new and expanded nuclear operations to meet their emission reduction obligations. *See* Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 65,757 (Oct. 23, 2015) (to be codified at 40 C.F.R. pt. 60) (noting the importance of completing under-construction units to achieving emissions reductions). However, the plan is currently stayed and President Trump has issued an executive order urging its reconsideration. *See* Exec. Order No. 13783, Promoting Energy Independence and Economic Growth, 82 Fed. Reg. 16,093, 16,095 (Mar. 31, 2017).

151 *See* Boyd & Carlson, *supra* note 22, at 847–50 (describing new nuclear construction in Georgia and South Carolina).

152 *See* Der, *supra* note 147, at 941.

153 *See* David Biello, *The Carbon Capture Fallacy*, Sci. Am., Jan. 2016, at 58, 61 (arguing that expense has been a barrier to significant CCS development).

154 U.S. Dep't of Energy, DOE/NETL Advanced Carbon Dioxide Capture R&D Program: Technology Update 12–13 (2013), https://www.netl.doe.gov/File%20Library/Research/Coal/carbon%20capture/handbook/CO2-Capture-Tech-Update-2013-Chapters.pdf (listing eight demonstration projects for CCS technologies in the United States).

155 *See* Boyd & Carlson, *supra* note 22, at 852 (describing the Kemper Plant in Mississippi, originally projected to cost $2.2 billion but now likely to cost at least $6.49 billion).

156 U.S. Dep't of Energy, *supra* note 155, at 4; *see also* Edenhofer et al., *supra* note 129, at 18 fig.SPM.7 (noting that "many models cannot reach [2 degrees Celsius] in the absence of CCS"); Biello, *supra* note 154, at 60 ("There is no credible plan to stave off global warming, whether from individual countries or the Intergovernmental Panel on Climate Change, that does not include [CCS].").

infrastructure options.[157] All told, given the scale of the change necessary, the choices made about what energy sources to pursue, and how quickly to pursue these changes, will have significant implications for the shape and scale of American life in the coming generations.

B. Regulatory Solutions

It is tempting to assume, as almost all energy law scholars have, that what is needed to tackle the decarbonization challenge described above is *better regulation*.[158] This view places faith in our ability to redesign energy governance to confront the challenge of climate change, without resort to public ownership.

There are two predominant proposed avenues for reforming electricity regulatory structures to better respond to climate change. One is to continue or increase our reliance on markets to deliver energy, but redesign market rules to accomplish climate change goals.[159] Most economists' preferred way to accomplish this goal would be through an economy-wide carbon tax or cap-and-trade system, which would raise the cost of producing more carbon-intensive electricity, without prejudging what technologies will best achieve decarbonization.[160] There are certainly efficiency reasons to prefer such a solution; however, there are also many compelling arguments as to why a carbon tax, standing alone, is unlikely as a practical matter to produce the decarbonized future we desire.[161] A full exploration of these objec-

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[157] *Cf.* Lesley K. McAllister, *Adaptive Mitigation in the Electric Power Sector*, 2011 BYU L. REV. 2115, 2121 (2011) (arguing that, in addition to mitigation, energy infrastructure decisionmaking should further climate change adaptation aims).

[158] *See, e.g.*, sources cited *supra* notes 23–25 and accompanying text (outlining various regulatory solutions to climate change).

[159] *See* sources cited *supra* notes 23–25 and accompanying text (outlining various regulatory solutions to climate change).

[160] *See, e.g.*, PETER HOWARD & DEREK SYLVAN, INST. FOR POLICY INTEGRITY, EXPERT CONSENSUS ON THE ECONOMICS OF CLIMATE CHANGE 2 (2015), http://policyintegrity.org/files/publications/ExpertConsensusReport.pdf (reporting survey results showing that 75% of expert economists favor a market-based mechanism as the best and most efficient means of implementing the Clean Power Plan).

[161] A recent blog post and two popular press articles present excellent distillations of the major objections to a stand-alone carbon price. *See* Brendan Haley, *Ontario's Climate Plan and the Promise of Mobilizing Markets and Society*, INSTITUT BROADBENT: BROADBENT BLOG (June 20, 2016), http://www.broadbentinstitute.ca/brendanhaley/ontario_s_climate_plan_and_the_promise_of_mobilizing_markets_and_society; Mark Jaccard, *Want an Effective Climate Policy? Heed the Evidence*, POL'Y OPTIONS (Feb. 2, 2016), http://policyoptions.irpp.org/magazines/february-2016/want-an-effective-climatepolicy-heed-the-evidence/ ("Carbon taxes and caps may be most effective in economic theory, but smart regulation will produce better climate policy for our political reality."); David Roberts, *5 Reasons There's More to Climate Policy than a Price on Carbon*, VOX (June 28, 2016, 10:00 AM), http://www.vox.com/2016/6/28/12045860/carbon-tax; *see also* JAMES H. WILLIAMS ET AL., 2 U.S. 2050: POLICY IMPLICATIONS OF DEEP DECARBONIZATION IN THE UNITED STATES 81

tions is beyond the scope of this Article, but let me note the most obvious and immediate: The United States appears exceedingly unlikely to adopt carbon pricing in the near future, and the few jurisdictions within the United States that have adopted such pricing have failed to establish prices anywhere near those necessary to induce major decarbonization.[162] Put otherwise, effective economy-wide carbon pricing is politically a no-go at this point.[163]

Absent a carbon tax, or in addition to it, regulators might pursue more targeted interventions within energy law. Regulators might, for example, impose a carbon "adder" to the market price of all electricity that varies by source, so that the price charged in wholesale markets reflects the carbon content of electricity.[164] Similarly, they

(2015), http://deepdecarbonization.org/wpcontent/uploads/2015/11/US_Deep_Decarbonization_Policy_Report.pdf (describing the "important potential drawbacks" of "establishing carbon pricing as the primary or only policy instrument" motivating decarbonization); Alex Trembath, *No, Really, Why Are We Waiting?*, ISSUES SCI. & TECH., Winter 2015, at 90, 90 (reviewing NICHOLAS STERN, WHY ARE WE WAITING? (2015)) ("History reveals that prices and scarcity have rarely, if ever, driven large-scale energy transitions.").

162 A recent study of carbon prices around the world determined them to be "virtually valueless." Matthew Carr & Joe Ryan, *Tough to Keep the World from Warming when Carbon Is This Cheap*, BLOOMBERG (Jul. 7, 2016), http://www.bloomberg.com/news/articles/2016-07-07/tough-to-keep-the-world-from-warming-when-carbon-is-this-cheap. Current carbon markets in the United States price carbon far below what the Obama Administration estimated as the "social cost of carbon." *Compare Auction Results*, REGIONAL GREENHOUSE GAS INITIATIVE, https://www.rggi.org/market/co2_auctions/results (last visited Nov. 6, 2016) (showing that carbon allowances in the northeastern United States sold for $4.53 per ton in the June 2016 auction), *and* CAL. AIR RES. BD., CALIFORNIA CAP-AND-TRADE PROGRAM AND QUÉBEC CAP-AND-TRADE SYSTEM AUGUST 2016 JOINT AUCTION #8 SUMMARY RESULTS REPORT 4 (2016), https://www.arb.ca.gov/cc/capandtrade/auction/aug-2016/summary_results_report.pdf (showing an average price in the August 2016 auction of $14.39), *with* INTERAGENCY WORKING GRP. ON SOCIAL COST OF CARBON, TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER, at 12, 18 (2013), https://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf (estimating a social cost of carbon of $36 for a metric ton of CO_2 emitted in 2013 based on 3% discount value). This "social cost of carbon" has, in turn, received criticism as itself undervaluing actual carbon costs, due to its tendency to "limit[ ]the ambition of current mitigation efforts based on unknowable future damage costs." JAMES H. WILLIAMS ET AL., ENERGY & ENVTL. ECON., INC. & DEEP DECARBONIZATION PATHWAYS PROJECT, 2 US 2050 EXECUTIVE SUMMARY: POLICY IMPLICATIONS OF DEEP DECARBONIZATION IN THE UNITED STATES 11 (2015).

163 By emphasizing the political infeasibility of carbon pricing, I do not mean to imply that I see this as its only impediment. I am persuaded by those thinkers who see carbon pricing best functioning as part of a suite of decarbonization policies. *See, e.g.*, sources cited *supra* note 162 (criticizing carbon tax as stand-alone solution). This larger suite of policies should include measures that incorporate not only market signals but also citizen preferences—arrived at through political processes—regarding the *type* of decarbonized future we want to pursue. I intend to explore this issue further in future work.

164 *See* Eisen, *FERC's Expansive Authority*, *supra* note 23, at 1786 (proposing that FERC's regulatory powers could include the ability to impose a carbon adder to the price

might create a "carbon intensity" standard that limits the amount of carbon-intensive energy each utility can include within its mix.[165] Or regulators might redesign energy company compensation so that companies are paid by the reliability of their energy sources.[166] Or FERC might require utilities to open up distribution systems to competition, just as it did for transmission lines, in order to promote distributed generation, energy efficiency, and demand response.[167]

However, many scholars are skeptical of whether policy makers are capable of redesigning markets to achieve decarbonization on the scale necessary. Emily Hammond and David Spence, for example, recently explored why electricity markets are failing to compensate nuclear energy appropriately, given climate change goals, and concluded that the present push for ever more competitive markets is out of accord with the goals of properly pricing externalities and reliability.[168] Similarly, William Boyd has argued compellingly that electricity markets are incapable of creating the investor certainty necessary to stimulate the major experimental infrastructure investment climate change demands.[169] And he is skeptical whether the

of energy based on its source); *see also* WEISSMAN & WEBB, *supra* note 23, at 3 (noting that FERC could introduce a carbon adder to the market price).

165 Such a system would be analogous to Renewable Portfolio Standards, which have been a popular strategy for promoting renewable energy. *See* Jocelyn Durkay, *State Renewable Portfolio Standards and Goals*, NAT'L CONF. ST. LEGISLATURES, http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx (last visited Oct. 20, 2016) (showing that twenty-nine states plus the District of Columbia have mandatory renewable standards, which require utilities to provide a certain percentage of electricity from renewable sources). California has adopted a carbon intensity standard for fuels consumed in the state, although it has not extended the standard to electricity. *See LCFS Electricity and Hydrogen Provisions*, CAL. ENVTL. PROTECTION AGENCY AIR RESOURCES BOARD, https://www.arb.ca.gov/fuels/lcfs/electricity/electricityh2.htm (last visited Oct. 20, 2016). EPA's "rate-based" methodology for calculating state compliance obligations under the Clean Power Plan is a carbon intensity standard, albeit one that applies to an entire state rather than to each individual utility. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,667 (Oct. 23, 2015) (to be codified at 40 C.F.R. pt. 60).

166 *See, e.g.*, Hammond & Spence, *supra* note 22, at 199 (describing how nuclear power could be priced to more accurately reflect its reliability).

167 *See generally* Eisen, *FERC's Expansive Authority*, *supra* note 23, at 1814–17 (discussing FERC's broad jurisdiction to regulate environmental and energy goals and its use of this jurisdiction to regulate transmission lines).

168 *See* Hammond & Spence, *supra* note 22, at 193 (discussing the incongruity between nuclear power's high market price and its environmental benefits); *see also* David Spence, *Why Some Electricity Markets Will Struggle with Decarbonization*, LEGAL PLANET (Mar. 22, 2016), http://legal-planet.org/2016/03/22/guest-blogger-david-spence-why-some-electricity-markets-will-struggle-with-decarbonization/ ("Competitive electricity markets may yet devise ways to price reliability and environmental performance accurately, but right now they seem to struggle with that task in ways that complicate the decarbonization of the electricity sector.").

169 *See* Boyd, *supra* note 22, at 1683.

"pathologies . . . that arise from the performance of the market under political constraints" can be cured through redesign.[170]

The other line of proposed reform, best articulated by Boyd as an antidote to his skepticism about the ability of markets to manage climate change, is a return to a more capacious understanding of what the *public* means in public utility regulation.[171] In his article *Public Utility and the Low-Carbon Future*, Boyd demonstrates the ways in which public utility regulation has always been a "normative effort directed at ensuring . . . the governance of essential network industries,"[172] and suggests that regulators might reharness public utility law's normative powers to respond to climate change. In particular, Boyd argues for the renewed importance of regulatory planning,[173] regulatory coordination of markets and the grid,[174] and regulatory experimentation.[175]

Boyd acknowledges that PUCs, pared down by decades of deregulatory initiatives, currently have considerably narrower responsibilities than those he would assign them under a revitalized notion of "public utility."[176] And PUCs, by and large, also lack the staff, expertise, and resources to tackle this renewed vision.[177] But he finds optimism in the fact that several PUCs around the United States are engaging in experimental, innovative projects to reform rate regulation to address climate change goals, and he advocates broadening these initiatives and creating the institutional capacity necessary to achieve them.[178]

I will return in Part III to discuss the ways in which outsourcing theory intersects with these proposed avenues of reform for electricity governance. First, however, I want to describe two governance options that have received considerably less scholarly attention: municipalization and its modern corollary, community choice aggregation.

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170 *Id.* at 1671; *see also* Griffin & Puller, *supra* note 114, at 9 (describing the reasons that electricity markets struggle to provide proper investment signals to new generation); Wolak, *supra* note 13, at 195.

171 *See* Boyd, *supra* note 22.

172 *Id.* at 1619.

173 *See id.* at 1695.

174 *See id.* at 1699–1703.

175 *See id.* at 1704.

176 *See id.* at 1649–50 (citing the judicialization of PUCs as a reason why they have been less able to fulfill their more creative and proactive responsibilities and to act as advocates for the public).

177 *See id.*

178 *See id.* at 1704–07.

C. Modern Energy Ownership: Municipalization Reborn

While states and FERC pursue these regulatory reforms with varying degrees of zeal, impatient cities are turning back to municipalization as a climate change strategy. Municipalization allows cities to reclaim control over the goals and performance of their electricity supply.[179] In a municipalized system, either the city council or an independent governing board or agency has direct control over a not-for-profit electric utility.[180] The council or board sets rates and establishes requirements governing utility performance, including energy efficiency mandates, renewable energy requirements, and targets for other aims such as local generation or the phasing out of coal-fired power.[181] As one city administrator recently described in explaining the impetus behind a municipally owned solar-plus-storage project in his village, a key advantage of municipal ownership is that "[w]hen we see an advantage for the community's citizens, we don't have to worry about what is best for shareholders."[182]

More direct control—and the ability to channel city policy preferences on climate change directly into utility oversight—forms much of the impetus for recent municipalization efforts.[183] However, these movements confront steep implementation hurdles. Although almost all states nominally preserve the option to municipalize,[184] the process

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[179] *Cf.* Scott Ridley, *Local Government: The Sleeping Giant in Electric Industry Restructuring*, ELECTRICITY. J., Nov. 1997, at 13, 14 ("[W]hat local governments offer . . . are forms that are publicly-accountable, non-discriminatory, nonprofit, subject to open meeting and ethics laws, and oriented toward advancing economic development and the public interest.").

[180] *See, e.g.*, WALTER BAER ET AL., RAND, GOVERNANCE IN A CHANGING MARKET, at xii (2001), https://www.rand.org/content/dam/rand/pubs/monograph_reports/2007/MR1189.pdf.

[181] For a description of how Austin, Texas has implemented such aims, see *infra* Section IV.B.

[182] *See* Herman K. Trabish, *Inside the First Municipal Solar-plus-Storage Project in the US*, UTIL. DIVE (July 5, 2016) [hereinafter Trabish, *Solar-plus-Storage*] (quoting Donald Harrod, the Administrator in the Village of Minster, Ohio), http://www.utilitydive.com/news/inside-the-first-municipal-solar-plus-storage-project-in-the-us/421470/.

[183] Again, I should emphasize that I do not mean to assert that all—or even most—municipalization efforts are driven by climate change. Many are driven by a desire to lower prices. The observation that municipalization provides more direct control over utility decisionmaking holds, however, irrespective of what the normative aims of a city takeover may be.

[184] *See* BRIGGERMAN, COSTINESCU & BOND, *supra* note 79 (finding a statutory right to municipalize in every state except Hawaii and Rhode Island). Whether or not a state is a home rule state, which vests local authorities with all powers not reserved to the state government, *see generally* Barron, *supra* note 18 (discussing home rule), is thus not a critical issue in debates over municipalization, given the explicit authority to municipalize granted in almost all states.

is complex.[185] In most states, a city can initiate municipalization only after a successful public referendum, which typically follows a legal, economic, and engineering feasibility study.[186] Successful municipalization efforts also usually require eminent domain authority to force the utility to sell its assets to the city.[187] Even where this threat is not carried out, it acts as an important backstop power during negotiations.

State legislation may grant the public utility commission a role in approving the substitution of a municipal utility for a privately owned one.[188] Commissions often play an obstructive role, given their central concern with "the impact of municipalization on the financial health of the [private utility] and its ability to continue to render quality service to its remaining service areas."[189] Cities also often face limits on their ability to finance a municipal takeover.[190]

To compound these legal challenges, utilities tend to fight tooth and nail against municipal takeovers. Where a referendum is required, utility opposition usually results in a vigorous public relations battle, in which utilities often spend considerable sums to defeat municipalization.[191] This opposition means that "municipalization efforts are typically expensive, both in monetary and political capital."[192]

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185 For those interested in more in-depth discussion of these complexities than can be provided in this Article, see generally Outka, *supra* note 25 (outlining the legal regimes governing and the various challenges facing a city's municipalization of its utilities).

186 *See* Kelly, *supra* note 9, at 43.

187 Most cities possess eminent domain or similar legal authority to establish or acquire an electric system. *See* BRIGGERMAN, COSTINESCU & BOND, *supra* note 79 (surveying each state's laws with regard to whether it can acquire, own, and operate an electric utility); Saxer, *Eminent Domain*, *supra* note 9, at 1511–14 (discussing legal issues related to cities' use of eminent domain to municipalize services).

188 *See* Kelly, *supra* note 9, at 45 (noting that state legislatures may grant a role in municipalization to agencies, finance departments, or utility commissions); *see also, e.g.*, City of Sheldon, 114 Pub. Util. Rep. (PUR) 4th 482, 500 (Iowa Utils. Bd. Aug. 2, 1990) (rejecting proposed municipal takeover on the grounds that it would not promote the public interest).

189 Kelly, *supra* note 9, at 45.

190 *See id.* at 54–55 (describing the economic costs involved with a municipal takeover).

191 *See* Alan I. Robbins & Stacy D. Gould, *Traditional Municipalization and Duplication of Facilities Cases: Background, Facts, and Status*, 37 NAT. RESOURCES J. 155, 157, 159–60 (1997) (describing costly public relations battles between private utility providers and cities seeking to municipalize utilities).

192 *Id.* at 157; *see also* David W. Penn, *Competition, the Consumer, and Local Decision Making: Public Power's Important Role*, ELECTRICITY J., Nov. 1997, at 30, 37 ("[I]ncumbent private utilities are spending big dollars and exerting political and institutional clout to block the formation of new public power entities."); Martin Schweitzer, *The Establishment and Transformation of Municipal Electric Utilities*, ELECTRICITY J., Oct. 1996, at 75, 79–81 (describing utility resistance in a study of five municipalization efforts).

Boulder, Colorado has advanced furthest towards municipalization as a climate change strategy in the face of these obstacles. Boulder has been quite explicit about its aims in municipalizing: It views owning and operating a retail utility as essential to accomplishing its aggressive climate change goals.[193] In municipalizing, Boulder seeks to create "the utility of the 21st century," which will focus heavily on reducing energy demand and promoting distributed generation.[194] The city's recent modeling efforts lead it to believe it can achieve its aims while maintaining rates "comparable or less" than neighboring utilities over a twenty-year time horizon, although its precise plans for doing so remain relatively vague.[195]

Boulder's referendum process has placed certain limits upon its municipalization effort: Acquisition costs must not exceed $214 million, rates must not exceed those of the private system, and greenhouse gas emissions reductions must be greater than those pursued by Xcel Energy, the private utility.[196] The city has begun negotiations with Xcel for the purchase of its system, but the two have yet to reach agreement.[197] Concurrently, Xcel has embarked on a multipronged legal strategy to block Boulder's municipalization efforts. In 2014, a district court judge halted Boulder's efforts to exercise eminent domain, ruling that it had to first obtain PUC approval because its system served some residents outside city limits.[198] The Colorado

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193 *See* CITY OF BOULDER, CITY COUNCIL AGENDA ITEM: UPDATE ON BOULDER'S ENERGY FUTURE MUNICIPALIZATION EXPLORATION PROJECT (2013), https://www-static.bouldercolorado.gov/docs/Dec17CCMemo-1-201312121106.pdf [hereinafter AGENDA ITEM] (providing an update on Boulder's initiative to municipalize its utilities to move the city toward a low carbon future).

194 *Id.* (discussing the goals for Boulder's future municipalized utility).

195 *See* CITY OF BOULDER, MODELING AND SAMPLE SPREADSHEET Q AND A 7 (2015), https://www-static.bouldercolorado.gov/docs/FINAL_modeling_and_cash-flow_spreadsheet_Q_and_A_with_FERC-1-201501121724.pdf (describing the city's utility modeling projects, including a model exploring the effect of municipalization on utility rates).

196 *See* AGENDA ITEM, *supra* note 194, at 2, 10 (noting that 2013 Ballot Question 2B passed on November 5, 2013); *2013 Ballot*, CITY OF BOULDER COLO., https://bouldercolorado.gov/elections/2013-ballot (last visited Oct. 20, 2016) (containing language of Ballot Question 2E, which passed). Ballot Questions 2B & 2C passed a utility tax and authorized the city to establish a municipal light and power utility. *See 2011 Ballot*, CITY OF BOULDER COLO., https://documents.bouldercolorado.gov/WebLink8/0/doc/61095/Page1.aspx (last updated Dec. 21, 2012) (containing language of Ballot Question 2B & 2C). They also imposed the rate and greenhouse gas emission restrictions on the future municipal utility. *Id.*

197 *See Boulder Files Petition to Acquire Xcel Facilities to Create a Municipal Utility*, PUB. POWER WKLY. (Am. Pub. Power Ass'n, Washington), July 28, 2014, http://www.publicpower.org/files/PDFs/PPW28July2014PDF.pdf (online newsletter noting that Boulder and Xcel had been negotiating but had yet to reach an agreement).

198 *See* City of Boulder v. Colo. Pub. Utils. Comm'n, No. 14CV30047, slip. op. at 11–12 (Colo. Dist. Ct. Boulder Cnty. filed Jan. 14, 2015) (explaining that Boulder sought to

PUC recently rejected Boulder's proposal to condemn certain infrastructure beyond city boundaries, but granted the city leave to amend its application to reach a different solution.[199]

Xcel is vigorously fighting Boulder's efforts for an obvious reason: A successful, climate-driven municipalization in Boulder might induce other cities to act. The utility's opposition may be close to paying off. In June 2016, Boulder reported that it has resumed negotiations with Xcel to find a settlement that improves the city's clean energy portfolio while stopping short of reclaiming electric grid assets from the private utility.[200]

Xcel employed a similar strategy recently in Minneapolis, the site of its corporate headquarters. In 2013, the Minneapolis city council held a public hearing to consider adding municipalization to the November ballot as a way to cost-effectively meet the city's goal of reducing greenhouse gas emissions thirty percent from 2005 levels by 2025.[201] Xcel quashed that movement by use of an effective, but site-specific threat: It let the city know that the $14 billion company could not possibly retain its headquarters in a municipalized city, such that it would have to move.[202] Minneapolis instead reached what has been called a unique city-utility partnership to find ways for the company to bring more clean energy to the city, as an alternative to municipalization.[203]

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acquire grid infrastructure outside city that was "intertwined" with the city system, and holding that PUC involvement was required).

199 *See* City of Boulder, Nos. 15A-0589E & C15-1360-I, 2015 WL 9595986, at *9–10 (Colo. Pub. Utils. Comm'n Nov. 4, 2015) (providing interim decision).

200 *See Boulder, Xcel Energy Acknowledge Settlement Discussions*, CITY OF BOULDER COLO. (June 8, 2016), https://bouldercolorado.gov/newsroom/june-8-2016-boulder-xcel-energy-acknowledge-settlement-discussions (announcing Boulder and Xcel have started settlement negotiations);Walton, *Five Years in, Boulder's Municipalization Fight Could Be Drawing to a Close*, UTIL. DIVE (July 5, 2016), http://www.utilitydive.com/news/five-years-in-boulders-municipalization-fight-could-be-drawing-to-a-close/421709/ (reporting that city officials and the private utility were in negotiations and that Boulder's push to establish a municipal utility may be in its final stages).

201 *See* Jake Anderson, *Mpls. Holds Public Hearing over City-Owned Utility*, TWIN CITIES BUS. (July 23, 2013), http://tcbmag.com/News/Recent-News/2013/July/Mpls-Holds-Public-Hearing-Over-City-Owned-Utility (describing the Minneapolis City Council's public hearing).

202 David Shaffer & Maya Rao, *Xcel Energy Weighs Exit from Minneapolis Under Municipal Utility*, STARTRIBUNE (July 26, 2013), http://www.startribune.com/xcel-energy-weighs-exit-from-minneapolis-under-municipal-utility/217034911/ (reporting the CEO of Xcel's announcement that Xcel would move its headquarters from Minneapolis if the city voted to municipalize).

203 *See* 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/ (reporting that Minneapolis and Xcel were expected to reach an agreement which is the first of its kind in the nation);

D. Community Choice Aggregation: "Deregulated Municipalization"

Alongside these challenging efforts at full municipalization, a movement in favor of Community Choice Aggregation (CCA) is growing. CCA offers the distinct advantage of easing the administrative and legal burdens of a city takeover: Whereas a city that municipalizes takes full ownership of the electric grid as well as control over decisions about energy supply, a community opting for CCA only assumes control over energy supply decisionmaking. CCAs continue to contract with the private utility for delivery of energy and maintenance of the grid's distribution system—that is, the wires and equipment that transport electricity supply to local consumers—and also typically utilize the private utility for billing.[204] The City's responsibility is limited to (1) negotiating contracts for electricity supply from the wholesale market (which can include purchasing supply from particular types of sources); (2) deciding whether to own and operate any of its own generation as a component of electricity supply (where permitted); and (3) administering programs to manage and reduce energy demand, such as energy efficiency, demand response, or incentives to encourage distributed generation.[205]

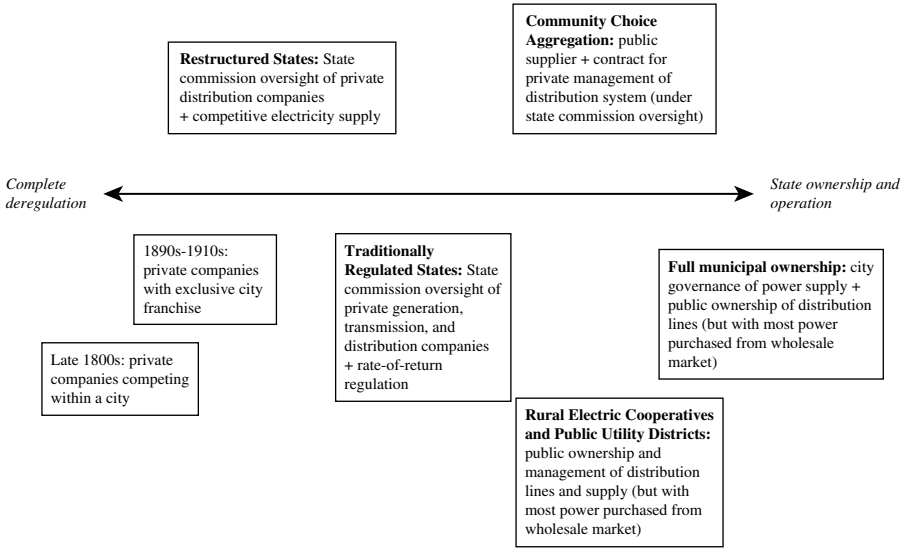
CCA thus represents a middle-ground regulatory option that falls somewhere between the state commission model and full municipalization, as depicted in the schematic below:

see also Outka, *supra* note 25, at 143–45 (describing Minneapolis's efforts to municipalize, including its decision to enter into an energy partnership with Xcel).

[204] *See, e.g.*, *Aggregation: Frequently Asked Questions*, CITY OF CINCINNATI, http://www.cincinnati-oh.gov/cityofcincinnati/news/city-saves-residents-163-on-natural-gas-bills/aggregation-frequently-asked-questions/ (last visited Oct. 20, 2016) (explaining that under Cincinnati's CCA program, consumers still receive bills from the private utility that reflect both delivery and supply charges).

[205] *See What Is CCA*, LEAN ENERGY U.S.: LOCAL ENERGY AGGREGATION NETWORK, http://www.leanenergyus.org/what-is-cca/ (last visited Oct. 20, 2016) (describing what CCA is and how such a program would work in a municipality).

FIGURE 2. ELECTRICITY GOVERNANCE REGIMES ALONG A MARKET—STATE CONTINUUM



Somewhat ironically, it is deregulation (primarily aimed at incentivizing private competition)[206] that created the opportunity for CCA as an alternative to full municipalization. As states joined regional wholesale electricity markets, cities gained easier access to affordable electricity supply.[207] And particularly in retail choice states, it became apparent that just as private companies could seek to amass a consumer base to serve, so could cities function as collectives of their individual consumers.[208] And because—as with municipalization—CCAs do not have the same drive to make a profit as private retail suppliers, they can choose to supply power in ways that meet additional city aims outside of cost savings alone, so as to function as aggregators of *citizen* preferences, not merely consumers.[209] CCA thus allows communities the same power as municipalization to determine their

206 *See supra* Section I.C.

207 *See* Kelly, *supra* note 9, at 47–48 (explaining how changes in federal law allowed municipal utilities to obtain cheaper power).

208 Ridley, *supra* note 180, at 14 (calling local governments "natural aggregators"); *see also* Peter Asmus, *Power to the People: Local Governments Go Green*, ELECTRICITY J., Nov. 1997, at 78, 78 ("[L]ocal governments no longer have to own and operate their own electricity businesses in order to imbue electricity purchase decisions with community values."); Hess, *supra* note 75, at 1067 ("One of the outcomes of the post-restructuring era of electricity in the USA is that the local level of scale has emerged as a site for contesting corporate ownership.").

209 *Cf.* Mark Sagoff, *Economic Theory and Environmental Law*, 79 MICH. L. REV. 1393, 1394–96 (1981) (arguing that people have different preferences in their roles as consumers and citizens).

energy mix and negotiate energy prices, without requiring the "expense, electoral battles, litigation, and steep learning curve involved in municipalization."[210]

Along with these political advantages come some potential disadvantages in terms of control. The fact that CCAs do not control electricity distribution and billing is certainly part of their appeal. But there are some ideas included within ambitious decarbonization agendas—including the creation of microgrids[211] and the integration of significant levels of distributed generation into the grid—where municipal ownership over the distribution system might prove important in achieving rapid progress.[212] CCAs relinquish the chance to pursue some of these reforms. Nevertheless, perhaps enough can be done within a CCA framework to make the administrative advantages of CCA outweigh any disadvantages.

As in the case of municipalization, however, a city's ability to implement CCA depends on state legal authority. Seven states explicitly authorize CCA: California, Illinois, Massachusetts, New Jersey, Ohio, New York, and Rhode Island.[213] Outside these states, CCA's permissibility is uncertain. Where not explicitly authorized, the possibility of a legal challenge on grounds of exceeding local authority deters communities from pursuing CCA.[214]

In those states that permit CCA, an interested city typically must first hold a referendum. If the referendum passes, all residents are automatically enrolled in the CCA unless they choose to opt out and

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[210] Hess, *supra* note 75, at 1069. Hess might overstate CCA's advantages in this regard: Although CCA might lessen utility-community battles, it does not necessarily eliminate utility opposition.

[211] Microgrids "organize distributed generation technology into a closed, low-voltage system that may address the needs of multiple users using multiple kinds of technologies." Sara C. Bronin, *Curbing Energy Sprawl with Microgrids*, 43 CONN. L. REV. 547, 559 (2010). They are typically capable of being "islanded" from larger electricity grids, making them an appealing option for creating a cleaner and more resilient electricity system. *See id.* at 569.

[212] Utilities widely oppose distributed generation, and frequently make claims that the grid cannot support large quantities of distributed solar energy. *See* Bronin, *supra* note 212, at 568; Shelley Welton, *Clean Energy Justice*, U. COLO. L. REV. (forthcoming 2017) (manuscript at 16–18), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2748136 (describing opposition to net metering, which facilitates distributed generation).

[213] *See* CAL. PUB. UTIL. CODE § 366.2 (West Supp. 2017); 20 ILL. COMP. STAT. ANN. 3855/1-92 (West 2015); MASS. GEN. LAWS ANN. ch. 164, § 134 (West Supp. 2016); OHIO REV. CODE ANN. § 4928.20 (West 2010); N.J. STAT. ANN. § 48:3-92 (West 2009); 39 R.I. GEN. LAWS § 39-3-1.2 (2006) New York's Public Service Commission recently authorized a pilot program for CCA. *See* Sustainable Westchester, Inc., No. 14-M-0564 (N.Y. Pub. Serv. Comm'n Feb. 26, 2015) (order granting petition in part for expedited approval of CCA program).

[214] Indeed, one of the reasons that Boulder chose to proceed with full municipalization is that Colorado does not permit CCA. *See* Memorandum from Jane S. Brautigam, City Manager, et al., to Members of City Council 21 (Jan. 27, 2015) (on file with author).

utilize a private supplier instead.[215] Then, the city—sometimes alone, sometimes in collaboration with other surrounding cities[216]—contracts with an electricity supplier to provide the city's power within a given set of constraints, and also often embarks on its own set of efficiency and clean energy initiatives and/or decides to own and operate some of its own generation.[217]

Many cities participate in CCAs specifically to save money.[218] Cities, with their opt-out model, are typically able to negotiate lower rates than competitive suppliers, who must sign up consumers individually.[219] Both Ohio and Illinois have hundreds of communities participating in CCA primarily as a cost-saving device.[220] One example in particular stands out as a model of how CCAs can cut costs: After deciding to transition to a CCA model in 2012, the City of Chicago eliminated its program in 2015 due to the fact that the city's private utility option had cut its rates, making the CCA no longer necessary to secure favorable prices.[221]

Many cities, however, seek CCA for reasons specifically related to climate change.[222] Marin County, California's CCA—"Marin Clean

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215 *See* Stephen Littlechild, *Municipal Aggregation and Retail Competition in the Ohio Energy Sector*, 34 J. REG. ECON. 164, 164 (2008).

216 *See id.* at 165 (explaining that in Ohio, ninety-four communities have formed "the largest community buying group of its kind in the nation").

217 Hess, *supra* note 75, at 1069 (describing benefits of CCA).

218 *Id.* at 175 (suggesting that the main predictor of CCA participation is "the scope for savings compared to the regulated price of the incumbent supplier").

219 *See* CAL. ENERGY COMM'N, COMMUNITY CHOICE AGGREGATION 1, 4 (2006), http://www.energy.ca.gov/2006publications/CEC-500-2006-082/CEC-500-2006-082.PDF (noting that the lower costs of municipal capital financing make renewable energy, with its high capital costs, more affordable for local governments than for privately owned utilities).

220 *See Illinois*, LEAN ENERGY U.S.: LOCAL ENERGY AGGREGATION NETWORK, http://www.leanenergyus.org/cca-by-state/illinois/ (last visited Nov. 6, 2016) (reporting that "Illinois is the fastest-growing CCA state in the nation," with over 650 participating communities, largely due to "an average customer rate savings of 25%–30% on electricity"); *Ohio*, LEAN ENERGY U.S.: LOCAL ENERGY AGGREGATION NETWORK, http://www.leanenergyus.org/cca-by-state/ohio/ (last visited Nov. 6, 2016) ("The largest aggregation in the state, Northeast Ohio Public Energy Council (NOPEC), serves over 500,000 customers in 174 communities and has estimated that its customers have saved more than $175 million since its inception in 2001").

221 *See* Cynthia Dizikes, *Chicago to Return Residents to ComEd*, CHI. TRIB. (Apr. 24, 2015, 6:04 PM), http://www.chicagotribune.com/news/local/breaking/ct-chicago-comed-met-20150424-story.html. Chicago also proves a cautionary tale in some ways for the purposes of this article: The city justified its decision to form a CCA on the grounds that it could obtain both lower rates and cleaner energy. However, once lower rates had been achieved by inducing competition with the private supplier, the city seemed unwilling politically to continue its CCA program for the explicit purpose of procuring cleaner energy than the state would require of the private utility. *See id.*

222 *See, e.g.*, CAL. ENERGY COMM'N, *supra* note 220 (listing "[i]ncreased use of renewable generation" as the first reason that California communities commonly choose CCA).

Energy" (MCE)—supplies over 50% of its power from renewable sources and will increase that amount to 80% by 2025.[223] Next door, San Francisco is implementing a CCA in order to achieve "direct responsibility and control over the GHG and renewable content of those supplies."[224] Cincinnati became one of the first cities to boast a 100% renewable energy supply when it voted to replace private utility Duke Energy with a CCA model in 2012.[225] San Diego is now considering doing the same, to further its commitment to receive all electricity from renewable sources by 2035.[226] Without CCA, one local advocate explained, the city has "no ability to require [its] utility to play along and achieve that goal."[227]

In California and Illinois, CCAs are permitted not only to initiate their own contracts for power, but also to develop power projects.[228] This gives CCAs in these states the ability to invest in preferred types of generation that might serve multiple goals. For example, Marin Clean Energy has touted its CCA-owned, 10.5 megawatt, 49-acre solar farm, currently under development on a local contaminated brownfield site, as bringing 341 local jobs in addition to renewably powering over 3000 homes per year.[229]

These climate-oriented CCAs are, to be sure, curated examples: Nothing about the CCA structure inherently requires participating communities to clean up their energy supply. Nevertheless, CCA

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223 MCE, MARIN CLEAN ENERGY – INTEGRATED RESOURCE PLAN: 2015 UPDATE 8 (2015).

224 S.F. PUB. UTILS. COMM'N, SAN FRANCISCO'S 2011 UPDATED ELECTRICITY RESOURCE PLAN 9 (2011), http://sfwater.org/Modules/ShowDocument.aspx?documentID=40.

225 *See* Philip Radford, *Cincinnati Dumps Duke Energy*, HUFFINGTON POST (Apr. 28, 2012, 4:22 PM), http://www.huffingtonpost.com/philip-radford/cincinnati-clean-energy_b_1457224.html.

226 *See* CITY OF SAN DIEGO, CLIMATE ACTION PLAN 35 (2015) (describing this goal).

227 Claire Trageser, *Turning San Diego's Electrical Grid into 100% Renewable Energy*, KPBS (Mar. 10, 2015) (quoting one local advocate), http://www.kpbs.org/news/2015/mar/10/turning-san-diego-electrical-grid-renewable-energy/. Additional examples include Cape Cod's longstanding "Cape Light" CCA, which has an impressive track record on energy efficiency, and Ohio's multicommunity CCA, the Northeast Ohio Public Energy Council (NOPEC), which helped shift away from reliance on coal-fired electricity. *See* Littlechild, *supra* note 216, at 165 (explaining NOPEC's role in transitioning Ohio communities to cleaner energy); Dina Rasor, *Six States Have Tried Community Controlled Power: What Works?*, TRUTHOUT (Mar. 31, 2014, 1:19 PM), http://www.truth-out.org/news/item/22800-six-states-have-tried-community-controlled-power-what-works discussing interview with Cape Light Compact Administrator); *see also* Hess, *supra* note 75, at 1070 (explaining the mechanism by which CCAs are vehicles for transition to clean energy).

228 *See* 20 ILL. COMP. STAT. ANN. 3855/1-92 (West 2015) (authorizing towns to both sell and purchase electricity); CAL. ENERGY COMM'N, *supra* note 220 (listing ability of California communities to develop generation projects as a benefit of CCA).

229 *Local Renewables*, MCE CLEAN ENERGY, http://mcecleanenergy.org/local-projects/ (last visited Nov. 6, 2016).

empowers communities that *do* have explicit climate goals to exert leverage in the electricity sector to make good on their pledges. Municipalization holds similar appeal for cities that choose to pursue—or are legally limited to pursuing—this more full-throated but politically challenging option.

In pursuing climate change aims, these movements for public control of energy resonate with the broad political and moral agenda of early twentieth century municipalizers.[230] Cities are again coming to see public ownership as a way to respond to problems that the state is not willing or able to solve for them. But to suggest that cities are turning to public ownership largely out of concern over whether they can otherwise meet their climate change goals raises a critical question: Are cities just grasping for any available leverage, or are there reasons to believe that public ownership is a more effective form of utility governance in the climate change era?

III
Constructing a Theory of Public Utility Ownership

> *"I might call the right of the people to own and operate their own utility something like this: 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."*
>
> —Franklin D. Roosevelt, 1932[231]

The history of municipalization illuminates why we might conceive of electricity supply as long "contracted out." As described in Section I.C above, nearly a century ago, states—with the support of privately owned utilities—opted for a model in which government, rather than owning and supplying electricity itself, supervises private actors delivering this essential service through what is sometimes called the "regulatory contract."[232] Under this contract, private enti-

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[230] *See supra* notes 67–69 (discussing agenda of twentieth century supporters of municipalization).

[231] Franklin D. Roosevelt, *Campaign Address in Portland, Oregon on Public Utilities and Development of Hydro-Electric Power*, Am. Presidency Project (Sept. 21, 1932), http://www.presidency.ucsb.edu/ws/?pid=88390.

[232] Hammond & Spence, *supra* note 22, at 142. The regulatory contract is alternatively referred to as the "regulatory compact." *See* Lyons, *supra* note 22, at 1628. Some scholars worry about the effects of referring to what is essentially a government-bestowed operating privilege as a "contract," pointing out that there is no reciprocal contractual obligation that guarantees cost recovery. *See, e.g.*, Ari Peskoe, Senior Fellow in Electricity Law, Harvard Environmental Policy Initiative, Comment Letter for the Second Installment of the Quadrennial Energy Review (June 16, 2016), https://epsa.energy.gov/qer-comments/sites/default/files/final-upload/2016-06-30_950_2016-06-30_929_harvard_env_policy_initiative_

ties accept government price regulation in exchange for a monopoly franchise.[233] Public utility law is, in essence, a long struggle to determine the appropriate parameters of this complex public-private contractual relationship.[234]

City-led municipalization and CCA movements remind us, however, that continued private electricity supply need not remain a foreordained conclusion in the era of climate change. Instead, these new movements demand that scholars come full circle back around to the question of the appropriateness of contracting out electricity.

Fortunately, administrative law scholars have now developed a considerably more sophisticated understanding of contracting out that can be used to guide this inquiry. This Part applies the insights of outsourcing theory to the problem of managing utilities under climate change. It argues that public ownership may well be a preferable governance model for managing the complexity of decarbonizing the U.S. electricity supply. More specifically, applying the literature on contracting out to electricity regulation yields two conclusions: (1) There is a strong theoretical basis for cities' decision to reclaim public control over electricity as a way to manage climate change, and (2) alternative solutions for reforming regulation of the electricity sector within the existing public-private framework face difficult—and perhaps insurmountable—barriers.

A. Old Choice, New Theory: Contracting Out Electricity

As described in Part I, even those who support the contracting out of many government services recognize that some services are inappropriate for outsourcing. The question here is how electricity

comment_-_regulatory_compact.pdf. I substantially agree with this critique, and by employing the notion of a "regulatory contract" I mean only to point out that the shape that state regulation has taken has largely resembled that of contractual management. I do not mean to suggest there is an inherent contractual relationship between states and their regulated utilities that exists outside of public utility law.

233 *See* Hammond & Spence, *supra* note 22, at 142.

234 *Cf.* Kenneth A. Bamberger, *Regulation as Delegation: Private Firms, Decisionmaking, and Accountability in the Administrative State*, 56 DUKE L.J. 377, 382–83 (2006) (arguing that regulation of firms is coming to look increasingly like delegation in practice); Moe, *supra* note 49, at 759 (describing principal-agent relationships between bureaucracy and regulated industries). Some scholars might quibble with whether public utility law is something different than "outsourcing," given the complex legal regime that controls the relationship between commissions and utilities under their oversight. But all outsourcing requires "contract management," which Steven Kelman defines as "efforts undertaken after awarding a contract to obtain successful contractor performance." Kelman, *supra* note 20, at 171. Public utility law is a robust, complex form of precisely this type of contract management. *But cf.* Sappington & Stiglitz, *supra* note 50, at 579 (characterizing regulation as an "intermediate between public and private ownership in terms of the associated transactions costs of government intervention").

provisioning fares under the terms set forth by contracting-out theorists. This subsection takes the three basic criteria for outsourcing established by John Donahue as representative of the general consensus in the field[235] and applies them to the field of electricity regulation under decarbonization constraints. It concludes that there are strong reasons to prefer government ownership of utilities under these constraints, as the utility sector is facing considerable challenges about how best and how quickly to respond to climate change.

1. Specificity

Until recently, electricity provisioning proved reasonably amenable to regulatory specificity: Contractors could be directed to provide reliable electricity to a particular service area at as low a cost as possible. Under climate change, however, the specificity of the task is diminished. Regulators who wish to decarbonize electricity face a range of complicated subsidiary considerations: How fast should this transition occur, and at what cost? Is it worth being a first mover on new technologies, or waiting until other regulators and utilities have tested and improved new designs?[236] How much reliability should be sacrificed to integrate more renewable energy sources into the grid?[237] How much should decentralized power be promoted?[238] How should we distribute the costs of the transition to cleaner energy?[239] Electricity supply decisionmaking now turns on a set of ill-defined but critical criteria that U.S. citizens and consumers want their future electricity supply to satisfy in terms of cleanliness, affordability, reliability, scale, location, and risk. These criteria are impossible to maximize concomitantly, and therefore will require difficult choices about the balance to strike as we implement decarbonization.[240] This broadening of aims renders the task of electricity provision considerably less

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[235] The three criteria are specificity, ease of evaluation, and competition. *See supra* notes 44–47 and accompanying text.

[236] *Cf.* Jonas J. Monast & Sarah K. Adair, *Completing the Energy Innovation Cycle: The View from the Public Utility Commission*, 65 HASTINGS L.J. 1345, 1348, 1359–64 (2014) [hereinafter Monast & Adair, *Energy Innovation Cycle*] (discussing the challenge of PUC-led innovation).

[237] *See* Spence, *supra* note 146, at 279 (noting that renewables must be integrated in ways that maintain grid reliability).

[238] *See id.* at 270 (discussing factors contributing to the difficulty of these decisions).

[239] *See* Welton, *supra* note 213, at 18 (discussing difficulties in cost distribution as some users choose to install their own clean energy equipment).

[240] *Cf.* Sappington & Stiglitz, *supra* note 50, at 575 ("[I]t is not a trivial exercise for the principal (government) to specify completely its preferences.").

specific, and more "ill-defined and changeable," than it was in the absence of climate change.[241]

Put otherwise, electricity regulation is exiting the realm of relatively "complete" regulatory contracts, where most terms could be specified in advance. It now involves "incomplete" contracts, where many of the details regarding desired characteristics and outcomes will have to be filled in as the contract progresses.[242] Although we have a reasonably good understanding of some of the tools available to combat climate change, their economic and technical characteristics have been in tremendous flux over the last several years,[243] as has the international and national political climate in which these strategies are implemented. There is thus a certain lack of foreknowledge that we must expect when it comes to decarbonization—decisions must be made and revised in light of rapidly changing technical, economical, and political contexts. Consequently, there is no longer a clean line that can be drawn between the regulatory role of specifying desired outcomes based on democratically (or bureaucratically) determined policy preferences, and the instrumentally rational process of carrying out these demands efficiently.[244] In these circumstances, outsourcing scholars widely agree that closer governmental control is advisable.[245]

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241 *See* Donahue, *supra* note 20, at 44. Although conventional environmental pollution already requires balancing these concerns to a certain extent, most of this regulation occurs exogenously to energy law, and enters the calculus of regulation as a cost to be borne and distributed. Climate change is forcing internalization of these considerations in a new way. *See* Alexandra B. Klass, *Climate Change and the Convergence of Environmental and Energy Law*, 24 FORDHAM ENVTL. L. REV. 180, 182 (2013) (discussing how any response to climate change must focus on fundamental changes to energy law).

242 *See* Hart, Shleifer & Vishny, *supra* note 50, at 1128 (applying an incomplete-contracts perspective to the question of government contracting).

243 For example, "[t]he price of U.S. solar power has dropped a whopping 70 percent since 2009." Christina Nunez, *Solar Energy Sees Eye-Popping Price Drops*, NAT'L GEOGRAPHIC (Oct. 2, 2015), http://news.nationalgeographic.com/energy/2015/10/151002-solar-energy-sees-eye-popping-price-drops/. Moreover, energy storage—which until quite recently remained an unrealistically expensive, unwieldy technology—now looks poised to become cost-competitive in many places in the United States. *See* PETER BRONSKI ET AL., ROCKY MOUNTAIN INST., HOMER ENERGY & COHNREZNIK THINK ENERGY, THE ECONOMICS OF GRID DEFECTION: WHEN AND WHERE DISTRIBUTED SOLAR GENERATION PLUS STORAGE COMPETES WITH TRADITIONAL UTILITY SERVICE 6 (2014).

244 *See* Rubin, *Possibilities and Limitations*, *supra* note 38, at 913 (noting the distinction for outsourcing theory between the instrumental rationality of implementing a policy goal and the democratic process of setting that goal).

245 *See, e.g.*, Sappington & Stiglitz, *supra* note 50, at 580–81 (arguing that public provisioning is advisable when "novel and complex" tasks require "rapid adaptation to unforeseen contingencies"); *cf.* Hart, Shleifer & Vishny, *supra* note 50, at 1141 (concluding that private contracting may be inferior where opportunities for private entities to cut costs by shirking on extracontractual quality measures are large).

2. Ease of Evaluation

Climate change also affects the second outsourcing criterion, "ease of evaluation." PUCs have always struggled to know whether regulated utilities are delivering electricity at the lowest rates possible. Indeed, one of the longstanding critiques of rate-of-return regulation is that information asymmetries allow utilities to exploit commissions in rate cases and earn rates of return higher than necessary to cover costs.[246]

Climate change is likely to exacerbate these asymmetries. Commissions rely upon regulated utilities to project future supply and demand, monitor and assess grid reliability, and make determinations about the optimal type and amount of new infrastructure investment.[247] These are crucial decisional points for determining the shape and scale of responses to climate change. But utilities also have superior expertise and information on these topics, including expertise with respect to the grid's ability to integrate renewable energy and demand response without creating unacceptable blackout risks or infrastructure costs. Because implementing such solutions frequently cuts against utilities' bottom lines,[248] there are particularly strong incentives for utilities to withhold or distort information relating to the feasibility and cost of these climate change mitigation tools. These differing incentives between regulators and utilities increase the difficulty of evaluating utility performance under climate change.[249]

3. Competition

Competition, Donahue's third criterion for outsourcing, has never been present in the regulated utility sector. The very notion of public utility regulation rests upon an understanding that competition in at least certain segments of the electric utility industry is undesir-

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[246] *See* Paul L. Joskow, *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks* [hereinafter Joskow, *Incentive Regulation*] (observing that regulated firms use information strategically, and that this problem may be exacerbated by regulatory capture), *in* ECONOMIC REGULATION AND ITS REFORM, *supra* note 13, at 291, 293.

[247] *See* Scott, *supra* note 22, at 409 (describing utilities' responsibilities under integrated resource planning). Deregulated markets rely more on nonprofit grid management entities, but these are agglomerations of for-profit companies that can withdraw at will. *See* Dworkin & Goldwasser, *supra* note 116, at 562 (detailing conflicts created by the composition of the boards of management entities).

[248] *See* Michael P. Vandenbergh & Jim Rossi, *Good for You, Bad for Us: The Financial Disincentive for Net Demand Reduction*, 65 VAND. L. REV. 1527, 1531 (2012) (describing how utilities' business model presents a barrier to reducing demand).

[249] Of course, one solution to this problem is to reinvent the structure of regulation, rather than resort to public ownership. For a discussion of this strategy and the challenges it presents under outsourcing theory, see *infra* Section III.B.

able, as it would prove uneconomic to have multiple companies replicate the wires and poles necessary to distribute electricity.[250]

Of course, competition in the electricity industry has not remained static: The restructuring of the 1990s made electricity provisioning considerably more competitive.[251] However, the electricity industry remains only partially opened to competition: Transmission and distribution remain wholly regulated, and even generation is not competitive across the whole country.[252] One of the benefits of municipalization and CCA today is that cities using these models already draw upon the competitive sector of the electricity market by purchasing wholesale power (often, specifically wholesale renewable power) from the market. In contrast, those tasks assumed by the CCA or municipal utility—retail supply, or retail supply plus distribution, respectively—continue to be functions provided by noncompetitive monopoly utilities in almost all parts of the country.[253] This fact makes it difficult to assert that competition in the electricity industry supports outsourcing of those tasks that municipal governments contemplate reclaiming.

Each of Donahue's outsourcing criteria, as applied to the field of electricity supply, thus points to the same conclusion: Electricity supply under climate change constraints increasingly resembles a "custom" task, unsuitable for outsourcing, and has ceased to be a "commodity" task.[254] The new regulatory mandate—to move with appropriate speed from cheap electricity supply to affordable, reliable, carbon-free electricity supply—may well be, in Donahue's terms, a task too "intimately entwined with subtle and shifting public missions,"[255] and one that requires too much creativity, vision, experimentation, and balancing between multiple goals to fit within outsourcing criteria.

4. Beyond the Classic Criteria

The extensive public law scholarship on contracting out gives further reason to question the continued superiority of outsourcing electricity. Before widespread understanding of the consequences of fossil

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[250] *See* PHILLIPS, *supra* note 105, at 3 (describing why competition is not fully effective for public utilities).

[251] *See supra* notes 113–24 and accompanying text (describing how deregulation of the wholesale and retail markets increased competition).

[252] *See supra* notes 113–18 and accompanying text (describing how some regions opted out of regional markets).

[253] Even in states that have nominally moved to a model of "retail choice," competition mostly remains limited. *See* Joskow, *Difficult Transition*, *supra* note 118, at 56.

[254] *See* Donahue, *supra* note 20, at 46.

[255] *See id.*

fuel–fired electricity existed, citizens had limited reasons to invest themselves in the choices utilities made about how to provision reliable, affordable electricity. Of course, there have always been public controversies over where to site generation and transmission facilities,[256] and U.S. citizens have greeted nuclear power with skepticism since the 1970s.[257] But by and large, generation decisions have been cost driven and the public has been quiescent.

In contrast, decisions about how to decarbonize require painful choices among pursuing carbon-free nuclear energy and its many risks; maintaining fossil fuel–based energy by adding expensive carbon capture and storage, whose risks are not yet entirely understood; and transforming the grid significantly enough to accommodate substantially more renewable energy. Ultimately, science and technology cannot answer for us the most difficult questions about how, and how quickly, to decarbonize, because making these decisions requires value judgments related to our risk tolerance and our regard for others.[258] These questions about the future of society's energy supply are worthy of greater democratic deliberation and political control than past decisions that merely aimed to balance electricity supply and demand. Because of their importance and the difficult trade-offs they require, we likely do not want these decisions driven predominantly by the market or by private companies.

Attention to the accountability literature amplifies this point. As cities consider municipalization, they are contemplating a shift within modes of accountability. They seek to shift from the market, or market-like, accountability of state and federal regulation to a greater degree of *political* accountability, which municipalization and CCA provide through their public governance structures.[259] This shift in modes of accountability may be advisable given the expanding set of goals facing electricity regulators. As Mashaw has noted, the market works best as an accountability tool when efficiency is the primary normative aim[260]—as it often was in electricity regulation last cen-

256 *See* Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 VAND. L. REV. 1801, 1830–31, 1836 (2012) (discussing siting issues).

257 *See* Hammond & Spence, *supra* note 22, at 185.

258 *See* Stephen M. Gardiner, *A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption*, 15 ENVTL. VALUES 397, 397–98 (2006) (arguing that "[t]he relevance of ethics to substantive climate policy" is clear).

259 *See* Mashaw, *supra* note 51, at 120–24 (describing public governance accountability regimes); *see also* Kelman, *supra* note 20, at 158 (noting that public agencies face pressures from the media and the political system, rather than from the marketplace).

260 *See* Mashaw, *supra* note 51, at 122, 133. *But see* Welton, *supra* note 213, at 42–43 (suggesting electricity regulation has never been limited to the aim of efficiency alone).

tury.[261] Political accountability is far more appropriate when there is a disparate set of goals to balance, as there is under decarbonization.[262]

The importation of the outsourcing literature into the energy regulatory context illuminates reasons why municipalization and CCA are strategically sound options for cities to use in addressing climate change. Although government oversight of private utilities worked reasonably well to achieve the aims of the last century, public control may prove better suited to managing the complex, hard-to-specify, hard-to-evaluate task of radically transforming the electricity sector to respond to climate change. In turning to more public forms of electricity governance, cities are first movers in adapting regulatory models for changing circumstances.

B. Outsourcing Theory and Alternative Regulatory Structures

In addition to highlighting the theoretical appeal of municipalization and CCA in the era of climate change, outsourcing theory offers insights into why alternative proposals for reforming electricity regulation may falter. As outlined above, scholars have suggested two dominant strands of reform for electricity regulation in the climate change era: better incorporating decarbonization aims into electricity markets, or giving state regulators more capacious authority to implement decarbonization goals.

Outsourcing theory reinforces scholarly skepticism about the ability of redesigned electricity markets to meet decarbonization goals.[263] Of course, in speaking of electricity markets, we are discussing a highly managed market environment, in which market managers carefully balance electricity supply and demand down to the very second, price electricity according to nodes of demand and supply, and monitor participants to ensure the absence of "market power."[264] Electricity markets are thus very much regulatory creatures themselves, which require considerable effort in their up-front design.

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[261] *See supra* notes 63–69 (describing the motivations for the push towards municipalization, including the relative inefficiency of private municipalities vis-à-vis publicly owned municipalities).

[262] *Cf.* DONAHUE, DECISION, *supra* note 57, at 12 (defining "accountability" as "fidelity to the public's values"); Mashaw, *supra* note 51, at 153 (describing how public governance accountability regimes "reinforce the normative commitments of the political system").

[263] *See supra* notes 168–70 and accompanying text.

[264] For more details on the formation of modern electricity markets, see Boyd & Carlson, *supra* note 22, at 820–21.

These markets function best when they have a stable backdrop of rules under which private competition can flourish.[265] But to function effectively in sending these types of stable investment signals, markets demand ex ante design *specificity* in Donahue's sense of the term.[266] If politicians and regulators are in fact uncertain as to the pace and desired parameters of decarbonization—and if reaching these conclusions will take iterative, experimental regulation, responsive to democratic concerns—then electricity markets will prove an inadequate way to accomplish the task.[267]

Moreover, markets are ill suited to creating holistic solutions that balance today's objectives with the realities of tomorrow. As Katherine Trisolini argues, our infrastructure solutions for climate change should be attuned not only to the challenge of decreasing carbon pollution, but also to the challenge of living in a future where, inevitably at this point, significant climate change and related disasters will occur.[268] Although private companies have some reasons to consider potential future conditions, they will not have incentives to consider the full costs of their technological choices, given that many of the costs of future system failure—e.g., blackouts, nuclear disaster, etc.—will fall on the public more broadly.[269]

Even if electricity market design could theoretically incorporate adequately specific decarbonization parameters, we might also worry about whether, as a political matter, sufficiently stringent signals could be put in place. Electricity market designers, working under political constraints, have a poor track record of creating markets that allow prices to fluctuate to the degree necessary to send proper market-

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265 *See* Griffin & Puller, *supra* note 114, at 19 ("Regulatory uncertainty can stymie investment, and better investment is the major theoretical upside of restructuring.").

266 *See supra* note 45 and accompanying text (providing Donahue's definition of specificity).

267 *See* Boyd & Carlson, *supra* note 22, at 826–27 (explaining why states without restructuring can exert greater control over electricity generation and reliability); David Newbery, *Reforming Competitive Electricity Markets to Meet Environmental Targets* 4–6 (Univ. of Cambridge Elec. Policy Research Grp., Working Paper No. 1126 & Cambridge Working Paper in Econ. 1154, 2011) (explaining how the United Kingdom reached the conclusion that "the electricity market was not well suited to delivering secure, sustainable and affordable electricity").

268 *See* Katherine Trisolini, *Holistic Climate Change Governance: Towards Mitigation and Adaptation Synthesis*, 85 U. COLO. L. REV. 615, 650 (2014) [hereinafter Trisolini, *Holistic Climate Change Governance*] (arguing that future vulnerabilities "weigh[ ]against large-scale, centralized power plants that rely on vulnerable long-range transmission or long-distance fuel transportation").

269 *See id.* at 676 (explaining how current nuclear energy regulations allow industry to externalize risks onto agencies).

based signals to buyers and sellers.[270] Instead, they have typically opted for greater consumer protection and less volatility than economic theory would suggest.[271] As David Spence chronicles in his article *Can Law Manage Competitive Energy Markets?*, politicians frequently place legal constraints on the restructuring of the U.S. electricity sector, often requiring that it be accompanied by the guarantee of lower rates.[272] But immediate requirements of lower rates typically do not allow for the kind of market price fluctuations that many proponents of restructuring believe are necessary to send long-term price signals capable of balancing supply and demand cost-effectively.[273] Consequently, in their quest to protect consumers and maintain affordability, regulators and politicians frequently distort "true" market signals about the relative value of supply and demand at various locations and times.[274]

Given this history, we might have limited confidence that policy makers will be willing to impose market signals strong enough to accomplish necessary decarbonization objectives.[275] Moreover, electricity market redesign can at best be a partial solution, given that transmission and distribution will necessarily remain regulated monopolies.[276]

Calls for regulatory reform, resting on the conclusion that a more *public* turn in utility regulation is necessary,[277] are far more persuasive than the notion that reengineered markets can deliver a decarbonized future with which U.S. citizens are satisfied. But outsourcing theory offers several insights into why the reinvigoration or reinvention of public utility law might prove to be a more challenging endeavor than reassuming more *direct* public control over utilities.

In its traditional form, public utility regulation holds utilities accountable in limited ways: Utilities are responsible for delivering power to all consumers within a service territory at a particular price,

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270 *See* David B. Spence, *Can Law Manage Competitive Energy Markets?*, 93 CORNELL L. REV. 765, 800 (2008) (discussing how electricity demand is less price elastic in short-term situations).

271 *Id.*

272 *Id.* at 794–804.

273 *Id.* at 802.

274 *See id.* I place "true" in quotation marks because, as noted above, even if wholesale electricity markets were allowed to fluctuate more drastically, the market is still heavily managed and thus strays from a neoclassical concept of the free market by necessity.

275 *See* Boyd, *supra* note 22, at 1692.

276 *See supra* Section I.C. (discussing structure of market model and potetial monopolies as a downside).

277 *See* Boyd, *supra* note 22, at 1708 ("A key task is to recover the *public* in public utility as we confront the challenge of collectively building a low-carbon future.").

set by a commission.[278] Typically, commissions also provide some sort of incentive to utilities to maintain a certain level of service reliability, since utilities would otherwise be tempted to skimp on quality of service in order to cut costs and increase profits.[279]

As numerous scholars and regulators have observed, this regulatory model creates natural and severe disincentives for utilities to cooperate with regulators on the goals that climate change demands: selling less electricity, building less infrastructure, and converting to nontraditional sources of electricity with more dispersed ownership.[280] Under a traditional model, these reforms equate to less revenue and more hassle for utilities, making them natural opponents of reform.

Innovative PUCs have attempted to cope with these challenges by adding layers of incentives and mandates to traditional rate-of-return utility regulation. Many have mandated that utilities source a specific quantity of their electricity from renewable sources, allowing for extra resulting costs to be recovered in rates.[281] At the same time, they have reformed ratemaking itself in two important ways: First, they have "decoupled" revenues from volumes of sales, guaranteeing utilities a certain level of revenue irrespective of whether sales increase or decrease.[282] Decoupling eliminates at least some of the incentive that utilities have to oppose programs like energy efficiency and demand response, which lower their overall sales volume.[283] But

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[278] *See* 1 ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 3 (1988) (describing the four principal components that distinguish public utilities from other sectors of the economy: control of entry, price-fixing, prescription of quality and conditions of service, and an obligation to serve all applicants under reasonable conditions).

[279] *See* Joskow, *Incentive Regulation*, *supra* note 247, at 291 (describing this phenomenon).

[280] *See, e.g.*, Vandenbergh & Rossi, *supra* note 249 (discussing these disincentives); *see also* STATE OF N.Y. DEP'T OF PUB. SERV., STAFF WHITE PAPER ON RATEMAKING AND UTILITY BUSINESS MODELS 21–23 (2015) (explaining the insufficiency of continued cost-of-service regulation); *cf.* Bamberger, *supra* note 235, at 399 (arguing that private firms have "particular incentives to exploit the 'slack' inherent" in any delegations to them).

[281] Twenty-nine states and Washington, D.C., utilize "Renewable Portfolio Standards" (RPS), which require utilities to obtain an annually increasing percentage of their power from renewable sources. *See* DSIRE, N.C. CLEAN ENERGY TECH. CTR., RENEWABLE PORTFOLIO STANDARD POLICIES (2016), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2014/11/Renewable-Portfolio-Standards.pdf.

[282] *See* REGULATORY ASSISTANCE PROJECT, REVENUE REGULATION AND DECOUPLING: A GUIDE TO THEORY AND APPLICATION 8–10 (2011), http://www.raponline.org/document/download/id/861 (describing how decoupling works). In contrast, under traditional rate-of-return regulation, commissions establish a "per-kilowatt-hour" rate that utilities charge consumers, thus making the utility's overall revenue dependent on the volume of sales. *Id.* at 2–8.

[283] Although decoupling severs the direct link between revenue and sales, utilities may still oppose it to the extent that it lowers overall necessary infrastructure investments. STATE OF N.Y. DEP'T OF PUB. SERV., *supra* note 281, at 3.

it does not provide any positive incentive for utilities to *want* to engage in these types of programs. For this reason, many commissions use "incentive regulation" to entice utilities to implement otherwise unpopular programs or goals.[284] For example, Massachusetts utilities can earn up to 5% of total energy efficiency program costs for meeting annual energy savings targets.[285]

These reforms are quite useful in achieving a certain degree of utility buy-in to programs that otherwise cut against their interests. But they prove to be quite targeted interventions, which dampen utility resistance to certain policies without eliminating fundamental regulatory tensions. Consequently, as new technologies and policies come along that are not covered under these incentive programs, utilities mount new challenges. For example, utilities are now battling the proliferation of solar panels under state "net metering" policies.[286] Net metering allows solar panel owners to run their electricity meter backwards—lowering the need for utility-provided power—whenever their panels generate more electricity than their household needs.[287] Utilities have also resisted the promotion of rooftop storage, which at mass scale could negate the need for centralized utilities altogether.[288]

Again, the most innovative PUCs are attempting to respond to new public-private divergences with new spins on regulation. Most notably, New York's Public Service Commission recently opened a proceeding dedicated to "Reforming the Energy Vision," which will transform utilities into electric grid coordinators rather than electricity providers, thus radically changing the way in which they earn profits.[289] But precisely what shape this radically reinvented role for utilities will take remains murky and untested. In May 2016, New York's Commission released a 170-page order detailing a new business model for utilities in the state.[290] The new system sounds

284 *See generally* Joskow, *Incentive Regulation*, *supra* note 247.

285 *See* NAT'L ACTION PLAN FOR ENERGY EFFICIENCY, ALIGNING UTILITY INCENTIVES WITH INVESTMENT IN ENERGY EFFICIENCY at 6-3 to 6-4 (2007) (describing Massachusetts's shareholder incentives for meeting annual energy targets).

286 *See generally* Troy A. Rule, *Solar Energy, Utilities, and Fairness*, 6 SAN DIEGO J. CLIMATE & ENERGY L. 115 (2015) (analyzing and evaluating utility opposition to net metering programs).

287 *See* Welton, *supra* note 213, at 17. *See also* Rule, *supra* note 287.

288 *See* Glenn Meyers, *The Looming Electricity Storage Threat Our Utilities Face*, CLEANTECHNICA (Feb. 4, 2016), https://cleantechnica.com/2016/02/04/looming-electricity-storage-threat-utilities-face/ (describing electric utility opposition to net metering and its effect on rooftop storage).

289 *See* STATE OF N.Y. DEP'T OF PUB. SERV., *supra* note 281, at 25 (describing the framework).

290 *See* STATE OF N.Y. PUB. SERV. COMM'N, ORDER ADOPTING A RATEMAKING AND UTILITY REVENUE MODEL POLICY FRAMEWORK (2016).

intriguing, but complex. Utilities in New York will now have "four ways of achieving earnings: traditional cost-of-service earnings; earnings tied to achievement of alternatives that reduce utility capital spending and provide definitive consumer benefit; earnings from market-facing platform activities; and transitional outcome-based performance measures."[291] Over the long term, New York anticipates transitioning to a model that facilitates as much consumer participation in energy markets as possible, but the Commission recognizes the long road it will take to get there and emphasizes a strategy of gradualism.[292]

I commend New York's Commission for its recognition that incrementalism, experimentalism, and iterative solutions are becoming a necessary part of utility ratemaking.[293] At the same time, this very recognition highlights why more public control over energy is gaining theoretical appeal. Commission proceedings are long, rancorous, and costly; as their complexity grows, so does the advantage of having a direct channel of public control over utility operations, goals, and strategies, where public desires can be translated directly into utility governance. Indeed, how elegant public control seems when compared to a four-pronged, custom-tailored, often changing set of utility incentives that must be continuously monitored and adjusted to satisfy both public aims and private profit margins.[294] Of course, local politics can also be a messy business, but at a minimum, local political control eliminates the profit-motive component of structuring the community-utility relationship.

I use New York as one example of the more widespread phenomenon of utility commissions struggling to constantly redesign legal regimes to keep up with utility discontents and disincentives that emerge as the goals of electricity regulation shift in response to climate change. Outsourcing theory suggests we should be neither surprised by this fact, nor sanguine about the possibilities for adaptation

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[291] *Id.* at 2.

[292] *See, e.g.*, *id.* at 22, 34 (explaining that New York is striving for a "power system that is more nimble, distributed and consumer focused," and that getting there requires "a careful balance of immediate regulatory changes" and proceeding with "deliberative caution" in order to "maintain[ ]the financial integrity of the electric industry").

[293] *See id.* at 38–39 ("[I]t will be critical as we move forward to constantly assess our progress and be prepared to make changes in direction . . . if warranted by the facts.").

[294] On this point, many community advocates have expressed skepticism about whether New York can accomplish its ambitious clean energy and climate change agenda while continuing to give private utilities a central role in electricity management. *See, e.g.*, *What's REV Why Does It Matter?*, AGREE N.Y.: ALLIANCE FOR GREEN ECON., http://allianceforagreeneconomy.org/content/reclaiming-energy-vision (last visited Oct. 5, 2016) (worrying that "the development of REV [the name of New York's clean energy agenda] has been highly influenced by New York's investor-owned utility companies").

in this regard.[295] The commission behavior described above is in essence an attempt to import new types of *specificity* into the regulatory contract. Regulators now must specify not only price and quality, but also a range of other values that have become important to the public but were not reflected in the original regulatory structure. But as these many recent state regulatory reforms illustrate, climate change—and the experimentation that most scholars agree it will require to decarbonize[296]—makes it challenging to adequately specify a regulatory regime and utility business model that works for both utilities and the public.

Innovative commissions are also struggling to *evaluate* what utilities are capable of doing with respect to climate change, so as to set appropriately stringent goals and calibrate rewards and incentives. As noted above, not only do utilities have incentives to obscure cost information from regulators, they also now have incentives to distort—or at least hold back—other valuable information with respect to climate change. None of the regulatory reforms described above is likely to alleviate these information asymmetries, which are inherent to the public-private regulatory framework in a sector where competition is necessarily limited.[297]

I do not mean to consign commission efforts to train utilities in new directions to the dustbin. To the contrary, to the extent that commissions have the capacity necessary to continually innovate in the ways that climate change demands of them, these efforts will prove valuable. But commissions are up against a formidable, persistent set of constraints, including shifting priorities and goals, active utility resistance, and a relative lack of expertise and information as compared to their private regulatees.

Moreover, commissions in many states are confined by judicial interpretations of their mandate to keep rates "just and reason-

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295 *Cf.* Dorf & Sabel, *supra* note 36, at 315 (arguing that "[t]he constant effort to adjust programs, regulations, and doctrines to changing circumstances" was the "undoing" of the centralized agencies of the New Deal).

296 *See, e.g.*, Boyd & Carlson, *supra* note 22, at 814–15 (describing the innovation necessary to achieve decarbonization).

297 *Cf.* Bamberger, *supra* note 235, at 381, 386, 399 (asserting that "information asymmetries between regulated firms and administrative agencies . . . prevent[ ] effective monitoring" and explaining the regulatory tendency to overdelegate discretion in the case where outcomes are uncertain); Brown & Potoski, *supra* note 49, at 446 (explaining that the biggest problems for principal-agent relationships are "information asymmetries and goal incongruence between principals and agents"). Joskow does an excellent job documenting why a shift to incentive regulation exacerbates information asymmetries in the utility sector. *See generally* Joskow, *Incentive Regulation*, *supra* note 247.

able."[298] Although some states interpret this phrase broadly to allow for consideration of environmental concerns, many courts have read this phrase to foreclose the importation of wider social goals into the ratemaking context, which they see as limited to questions of affordability alone.[299] This legal constraint is likely to act as a check upon the spread of climate-focused, commission-level innovation outside of certain permissive state legal environments. Conversely, this same check typically does not apply to city-controlled efforts.[300]

At the same time, it is important to recognize the check that state regulation can play upon the possibility of shirking at the city, district, or cooperative level. As noted above, although only a few states subject their publicly owned utilities to full commission regulation, many include publicly owned utilities in certain clean energy requirements,

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[298] The mandate to keep rates "just and reasonable" is the cornerstone of public utility commission regulation. *Cf.* James C. Bonbright, Albert L. Danielsen & David R. Kamerschen, PRINCIPLES OF PUBLIC UTILITY RATES (2d ed. 1988), 2005 WL 998333 ("A public utility is expected to provide just and reasonable services to all who want them at the prescribed, regulated prices."). How this phrase is interpreted, however, varies state to state. Jonas Monast and Sarah Adair explain that typically commissioners interpret their duty to ensure "just and reasonable" rates to require pursuing the lowest possible cost of service for consumers, thus creating a barrier for clean energy innovation that might have long-term benefits but higher short-term costs. *See* Monast & Adair, *Energy Innovation Cycle*, *supra* note 237, at 1359–60. One recent Kentucky opinion illustrates how "just and reasonable" can prove to be a limitation for clean energy policy at the utility- commission level: In *Kentucky Industrial Utility Customers, Inc. v. Kentucky Public Service Commission*, Kentucky's Court of Appeals held that the Commission could not justify approval of cost recovery for a biomass facility as "just and reasonable" on the grounds that the state had a policy in place to promote biomass over other sources; instead, the Commission should have balanced these policy considerations against "the reasonableness of the rate increase proposed." Indus. Util. Customers, Inc. v. Ky. Pub. Serv. Comm'n, No. 2015-CA-000398-MR, 2016 WL 3886312, at *11–12 (Ky. Ct. App. July 15, 2016).

[299] *See, e.g.*, Grand Council of the Crees v. FERC, 198 F.3d 950, 956–57 (D.C. Cir. 2000) (reviewing cases and FERC decisions and finding that, "[u]nsurprisingly, the Supreme Court has never indicated that the discretion of an agency setting 'just and reasonable' rates for sale of a simple, fungible product or service should, or even could, encompass considerations of environmental impact (except . . . as the need to meet environmental requirements may affect the firm's costs)"). Michael Dworkin, David Farnsworth, and Jason Rich argue, however, that there are typically at least some mechanisms within most states' laws to permit consideration of environmental matters within public utility decisionmaking. *See* Michael Dworkin, David Farnsworth & Jason Rich, *The Environmental Duties of Public Utility Commissions*, 18 PACE ENVTL. L. REV. 325, app. at 335–382 (2001) (cataloguing state rules regarding the consideration of environmental impacts within public utility commission decisionmaking). They do not, however, focus specifically on where "just and reasonable" rate requirements have been interpreted to permit substantial restructuring of ratemaking principles to achieve environmental ends. *See id.*

[300] *See* RAP, *supra* note 32, at 23–24 (noting that city utilities are generally subject to control by city councils or a special board that may answer to the city council, rather than by state regulatory agencies that regulate investor-owned utilities).

such as renewable portfolio standards.[301] State regulation can thus serve as an important floor for publicly owned utilities in localities that evince no desire to act on climate change.[302] But for localities ready to go above and beyond, attempting to reform the state commission model to achieve climate goals that differ from those of statewide climate preferences is likely to prove a frustrating way to proceed.

Thus, alongside commendable state experimentation with ways to move various regulatory frameworks towards decarbonization,[303] we should give more weight and consideration to cities' deployment of more truly *public* forms of utility governance.

IV
From Theory to Practice

Any suggestion that municipalization and CCA may be theoretically superior regulatory structures for the climate change era is likely to provoke skepticism among pragmatists. Even if the models offer some theoretical advantages in addressing climate change, there is a reason that private models won out last century across a range of goods and services: Well-documented efficiency challenges plague bureaucracy as compared to private enterprise.[304] Local governments, after all, aren't uniformly known for their effectiveness and respon-

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[301] *See supra* notes 31 and 101 and accompanying text.

[302] One might ask, in all this celebration of localism, whether we should also be willing to let locally owned utilities opt to fall below a state floor on climate change, if this is the locality's political inclination. The powerful counterargument to this point is that climate change imposes classic—and enormous—externalities that supply excellent justifications for imposing regulatory floors on recalcitrant actors. *See* Lazarus, *supra* note 137, at 1160–61 (discussing why climate change is a "super wicked" problem); Richard B. Stewart, *Environmental Quality as a National Good in a Federal State*, 1997 U. Chi. Legal F. 199, 210 ("I think we must simply conclude, as a matter of fact, that many Americans regard environmental quality as an important national good that transcends individual or local interest.").

[303] Once again, for an excellent discussion of the regulatory experiments occurring across U.S. states, see Boyd & Carlson, *supra* note 22, at 841–81 (discussing how states use their ratemaking powers to experiment with advanced low-carbon baseload generation, grid modernization, distributed energy resources, and time-variant rates).

[304] *See* Jon D. Michaels, *Privatization's Progeny*, 101 Geo. L.J. 1023, 1030–32 (2013) (describing the efficiency rationale for privatization); *cf.* Donahue, Decision, *supra* note 57, at 57 (noting that the promise of superior efficiency is the primary motivator of privatization). Although efficiency stands out as the dominant rationale for privatization, concerns about corruption, insufficient capitalization of public entities, and weak incentives for innovation have also played a role in the preference for private companies in place of public ones, particularly in the electricity sector. *See* Hirsh, *supra* note 64, at 33–35 (describing the characteristics of privatized but regulated United States energy utilities in the late nineteenth and early twentieth centuries).

siveness.[305] Given these disadvantages, it is reasonable to question whether municipalities are, in practice, capable of addressing climate change more effectively than state-controlled private entities.

This question is worthy of multiple case studies to reach a comprehensive answer. This Article focuses on making a theoretical case for municipalization, leaving exploration of the practical questions it raises for others. Nevertheless, without aiming for or claiming comprehensiveness, this subsection offers a sketch of why municipalization and CCA's advantages appear to outweigh their disadvantages, at least in cities with local governments that prove responsive to citizen concerns about climate change. To do so, it draws from two sources: the economics literature on the relative efficiency of public and private utilities, and a case study of one municipal utility outperforming its private peers on decarbonization metrics.

A. Economic Disadvantage?

Many economists assert economic efficiency as private ownership's chief asset.[306] Under this theory, private owners, driven by the profit motive, have considerably greater incentives to monitor the performance of their managers.[307] Moreover, private owners are able to avoid inefficiencies resulting from political meddling that injects nonefficiency aims into management.[308] In contrast, public sector managers are hampered not only by such meddling but also by civil service rules that impede them from attracting talented employees and terminating unmotivated ones.[309]

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[305] *See, e.g.*, Matthew J. Parlow, *Civic Republicanism, Public Choice Theory, and Neighborhood Councils: A New Model for Civic Engagement*, 79 U. COLO. L. REV. 137, 141–42 (2008) ("Citizens describe their experience with local government as marked by apathy, frustration, and disenfranchisement.").

[306] *See*, *e.g.*, Hart, Shleifer & Vishny, *supra* note 50, at 1127 (noting that advocates of government contracting argue that private suppliers deliver public services at a lower cost than do public employees); Megginson & Netter, *supra* note 28, at 347 (reviewing empirical studies and concluding that they "almost unanimously report increases in performance associated with privatization"); Harvey L. Reiter, *Competition Between Public and Private Distributors in a Restructured Power Industry*, 19 ENERGY L.J. 333, 341 (1998) ("An argument often advanced to support privatization of public assets is that private companies are inherently more efficient than their publicly owned counterparts."); Andrei Shleifer & Robert W. Vishny, *Politicians and Firms*, 109 Q.J. ECON. 995, 996 (1994) ("[A] substantial body of empirical evidence documents . . . the superior efficiency of private firms relative to comparable public firms."); Vickers & Yarrow, *supra* note 49, at 117 (finding that "[o]verall, the evidence suggests that in competitive industries private ownership is generally (though not universally) preferable on efficiency grounds").

[307] *Cf.* Shirley & Walsh, *supra* note 28, at 25 (describing how managers in public bureaucracies are only motivated by efficiency to the extent that they compete with other government agencies for the provision of government services).

[308] *See, e.g.*, *id.* (discussing this phenomenon).

[309] *See* Michaels, *supra* note 305, at 1031–32 (reciting but not endorsing this argument).

If this efficiency claim were true with respect to electric utilities, it would certainly cut against the desirability of moving back towards public ownership. A substantial efficiency advantage might suggest we should prefer that privately owned utilities implement climate change policy *even though*, as the previous section illustrated, they are harder to manage in achieving climate goals. However, this narrative proves complicated in the utility sector, where the choice is between regulated monopoly and public ownership. In this case, several studies raise doubts regarding the superior efficiency of private ownership.[310] Indeed, the evidence suggests that public power is frequently cheaper from an end-consumer perspective—that is, public power has a "rate

[310] *See* DONAHUE, DECISION, *supra* note 57, at 76 (collecting comparative studies and noting that "[n]o study even hints at superior private efficiency"); LAWRENCE J. HILL, OAK RIDGE NAT'L LAB., ORNL/TM-10497 PUBLIC POWER IN THE U.S. ELECTRIC UTILITY INDUSTRY: REGULATORY ISSUES AND COMPARATIVE FINANCIAL INDICATORS ACROSS OWNERSHIP TYPES 5-3 (1988) (finding that in 1984, publicly owned utilities had a lower average price for end-use electricity than investor-owned utilities because of available sources, access to capital, and regulatory issues); JOHN E. KWOKA, JR., POWER STRUCTURE: OWNERSHIP, INTEGRATION, AND COMPETITION IN THE U.S. ELECTRICITY INDUSTRY 16–18 (1996) (reviewing the literature and finding that "a preponderance of studies finds lower costs from public ownership rather than from (regulated) private ownership"); Anthony E. Boardman & Aidan R. Vining, *Ownership and Performance in Competitive Environments: A Comparison of the Performance of Private, Mixed, and State-Owned Enterprises*, 32 J.L. & ECON. 1, 5 (1989) (collecting empirical evidence of relative efficiency across industries and noting that there is "some evidence of superior public efficiency" in electricity and water, likely due to the fact that "there is limited competition or the private firms are highly regulated" in these sectors); Thomas Brom & Edward Kirshner, *Buying Power: Community-Owned Electric Systems*, WORKING PAPERS FOR NEW SOC'Y, Summer 1974, at 46, 48 (using Federal Power Commission reports to demonstrate that public systems showed lower costs per kilowatt-hour than private systems in 1971); William M. Emmons III, *Implications of Ownership, Regulation, and Market Structure for Performance: Evidence from the U.S. Electric Utility Industry Before and After the New Deal*, 79 REV. ECON. & STAT. 279, 279 (1997) (finding that for the period and companies studied, "while state regulation reduced electric rates to a limited extent, prices were even lower when utilities faced competition and/or were publicly owned," but that the "net impact of regulation, public ownership, and competition on technical efficiency is ambiguous"); William J. Hausman & John L. Neufeld, *Property Rights Versus Public Spirit: Ownership and Efficiency of U.S. Electric Utilities Prior to Rate-of-Return Regulation*, 73 REV. ECON. & STAT. 414, 414 (1991) (analyzing "the relative productive efficiency of publicly-owned versus privately-owned electric utilities at the end of the nineteenth century" and finding that "for every measure examined, the municipally-owned electric utilities were significantly more efficient than their privately-owned counterparts"); Reiter, *supra* note 307, at 342 ("[T]here is no consensus that private electric utilities are relatively more efficient than public ones."); Vickers & Yarrow, *supra* note 49, at 117 (finding "very mixed" results in empirical studies of industries with natural monopoly elements); John E. Kwoka, Jr., *Public vs. Private Ownership and Economic Performance: Evidence from the U.S. Electric Power Industry* 5 (Harvard Inst. of Econ. Research, Discussion Paper No. 1712, 1995) (noting that the literature on cost function estimation shows that publicly owned utilities more often than not have lower costs than their privately owned counterparts because of greater access to low-cost hydro power, lower cost of capital, and exemptions from most federal and state taxes).

advantage."[311] The American Public Power Association, a municipal advocacy organization, reports that today, "[o]n a national basis, private power residential customers pay average electricity rates that are about 13 percent more than those paid by public power customers."[312]

Many question whether this differential is due to relative legal treatment, rather than inherent efficiencies in public power. Public power systems can borrow money using tax-exempt bonds, are exempt from state and local taxes, and have preferential access to federally generated power, particularly from large hydropower facilities.[313] These differences certainly contribute to publicly owned utilities' rate advantage, but some studies suggest that they do not explain the majority of it. Instead, one researcher notes that "econometric studies show that 60 percent of the public power rate advantage is due to the inherent nature of public power, principally, its public service purpose, local cost scrutiny, and nonprofit operations."[314] And certainly, the fact that electric service provisioning remains largely monopolized, without significant competition and requiring extensive regulatory oversight, changes the efficiency calculus of utilities as compared to other economic sectors.[315]

For purposes of this Article, no conclusion need be reached about whether or why publicly owned power systems are more economically efficient than their private counterparts. The relevant point is that there is no strong argument that when it comes to electricity in particular, shifting to public power causes an enormous loss in efficiency of traditional operations. If one is to dismiss municipalization as an impractical option, it must be for other reasons.

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311 *See* AM. PUB. POWER ASS'N, *supra* note 98, at 1; Penn, *supra* note 193, at 33 (noting that public-power consumers' rates have typically been lower than private-power consumers' rates in large part because no dividends or profits must be added to costs and paid to stockholders).

312 AM. PUB. POWER ASS'N, *supra* note 98, at 1.

313 Kwoka, *supra* note 311, at 5.

314 Penn, *supra* note 193, at 34 (arguing that tax and preferential access to power make up only a small percentage of public power's cost differential). Note that most public power utilities make "contributions" to state and local government in lieu of taxes, which often amount to approximately the same percentage of revenues as private taxes. *See id.*; *see also* Moody, Zummo & Beauchamp, *supra* note 99, at 90 (reporting that three-quarters of publicly owned utilities make such payments).

315 *See* DONAHUE, DECISION, *supra* note 57, at 77 (noting that utilities are natural local monopolies that, "if unconstrained[,] . . . tend to charge too much and produce too little"); Vickers & Yarrow, *supra* note 49, at 116–17 (noting that competition can improve efficiency incentives and identifying electric utilities as an industry with natural monopoly elements).

B. A Climate-Focused Public Utility in Action

Even if municipal electric utilities are reasonably efficient in delivering on traditional goals as compared to their private counterparts, one might worry about their ability to maintain the quality and affordability of their service while responding to the additional goal of decarbonization. Can they really, in practice, balance this multiplicity of aims and translate them into effective reforms?

The answer, at least with respect to a leading subset of municipalities, appears to be yes. Cities with ambitious climate goals and publicly owned electricity systems are using their control to great effect. This section begins by describing one such leading effort—that of Austin, Texas—and then relates its utility governance structure to its success in decarbonizing electricity.

1. Austin's Decarbonization Trajectory

Austin Energy has served as the publicly owned electric utility for Austin, Texas since 1895.[316] Today, it serves more than one million residents in the Greater Austin area, making it the eighth-largest publicly owned utility in the country.[317] The utility is directly governed by the Austin City Council.[318]

Austin Energy has a long-standing, self-celebrated reputation as one of the greenest utilities in the nation: Although the population of Austin has grown 80% since 1990, Austin Energy's use of fossil fuel electricity generation has *decreased* by 1.5%.[319] The utility accomplished this feat primarily through aggressive "demand side management"—that is, investment in the kinds of policies that private utilities typically fight strenuously, as well as the purchase of considerably

316 *Austin Energy At-A-Glance*, AUSTIN ENERGY, http://austinenergy.com/wps/portal/ae/about/at-a-glance/austin-energy-at-a-glance (last visited Feb. 14, 2017).

317 *Id.*

318 This governance model endured through a significant public debate and series of resolutions over whether to move to an independent utility board in 2013. *See, e.g.*, Peter McCrady, *The Fight over Austin Energy's Governance*, COMMUNITY IMPACT NEWSPAPER (May 20, 2013, 12:00 AM), http://communityimpact.com/2013/05/20/the-fight-over-austin-energys-governance/ (discussing an April 11, 2013 proposal to the Austin City Council to create an independent government board); Memorandum from Marc A. Ott, City Manager, to Mayor and Council Members (Apr. 5, 2013), http://www.austintexas.gov/edims/document.cfm?id=187122 (providing a draft ordinance to create and define the powers and duties on an independent board of trustees to oversee Austin Energy). Instead, the City Council voted in May 2013 to create a Committee on Austin Energy within the City Council that is charged with making utility governance recommendations. *See* Austin, Tex., City Council Res. 20130523-071 (2013).

319 *Investing in a Clean Future: Austin Energy's Resource, Generation and Climate Protection Plan to 2020 Update*, AUSTIN ENERGY 1, https://austinenergy.com/wps/wcm/connect/c0ef5620-bbb0-42ba-aa8f-eb8fadf7eb05/GenerationResourcePlanloresF0214+(2).pdf?MOD=AJPERES.

more renewable energy from Texas's independent wholesale electricity market.[320] These investments in demand reduction also allowed Austin Energy to go eighteen years without increasing base electricity rates.[321]

The Austin Climate Protection Plan (ACPP), which the City Council adopted in 2007[322] and expanded in 2010[323] and 2014,[324] has accelerated these accomplishments in recent years. The original ACPP set the goal of making Austin Energy "the leading utility in the nation for greenhouse gas reductions" by sourcing 30% of the city's electricity from renewables by 2020.[325] As early-stage implementation proved the affordability and feasibility of its strategy, the Council increased these aims, requiring that by 2020, Austin Energy reduce electric demand by 800 MW through energy efficiency programs, supply 35% of Austin's energy needs with renewable resources, and install 200 MW of solar energy capacity.[326]

Plans beyond 2020 have scaled up further: In 2014, the City Council passed a resolution committing Austin to a goal of zero net emissions by 2050,[327] and later adopted a new Generation Plan for Austin Energy setting a goal of 55% renewables by 2025.[328] Because

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320 *See id.* at 1, 3–4 (describing Austin Energy's participation in the Electric Reliability Council of Texas's Nodal Market for buying and selling wholesale power, and listing Austin Energy's renewable power sources).

321 AUSTIN ENERGY, OUR ENERGY ROADMAP 15 (2014), https://austinenergy.com/wps/wcm/connect/b08ba414-ce2f-43f8-a78b-676c5583ed73/ourEnergyRoadmap.pdf?MOD=AJPERES [hereinafter AUSTIN ENERGY, ROADMAP] (noting that adding units to an existing power plant in stages on an as-needed basis and emphasizing energy efficiency and renewables allowed Austin Energy to avoid passing costs on to consumers).

322 *See* Austin, Tex., City Council Res. 20070215-023 (2007) (establishing the framework for the 2007 Austin Climate Protection Plan).

323 AUSTIN ENERGY, ROADMAP, *supra* note 322, at 3 (noting that the City Council passed the citywide Austin Climate Protection Plan in 2007 and further expanded it on Earth Day 2010).

324 Austin, Tex., City Council Res. 20140410-024 (2014) (noting that the City Council established the framework for the Austin Climate Protection Plan with the passage of Resolution No. 20070215-023).

325 *See* Austin City Council Res. 20070215-023 (establishing the framework for the 2007 Austin Climate Protection Plan).

326 *See* AUSTIN ENERGY, ROADMAP, *supra* note 322, at 3 (discussing adoption of the Austin Energy Resource Generation and Climate Protection Plan through 2020 on Earth Day 2010).

327 *See* Austin City Council Res. 20140410-024 (2014).

328 AUSTIN ENERGY, AUSTIN ENERGY RESOURCE, GENERATION AND CLIMATE PROTECTION PLAN TO 2025: AN UPDATE OF THE 2020 PLAN 3 (2014), https://austinenergy.com/wps/wcm/connect/461827d4-e46e-4ba8-acf5-e8b0716261de/aeResourceGenerationClimateProtectionPlan2025.pdf?MOD=AJPERES (noting that the plan uses revenues and capacity created by a new highly efficient combined-cycle plant investment to allow for the retirement of older fossil fuel generation and to support an increase in renewable energy to 55% of customer demand).

of decreasing prices for solar, the City Council recently ordered Austin Energy to contract for an additional 600 MW of solar energy by 2019.[329] Austin Energy notes that this acquisition will make it nearly four times more renewable than Texas as a whole.[330]

Austin Energy has also pioneered an innovative solution to one of the big challenges plaguing utilities with respect to rooftop solar: how to compensate owners of solar panels at a rate that reflects the value of solar power to the grid, while fairly charging solar panel owners for the remaining services they receive from the grid.[331] In most states, including Texas, the prevailing answer has been net metering.[332] But whereas private utilities across the country are campaigning to repeal this policy for the threat it presents to their bottom line, Austin's City Council has taken a different tack. It pioneered a policy called the "Value of Solar Tariff" that more precisely compensates solar panel owners for the value they add to the grid, while charging them separately for grid use.[333] Solar advocates, regulators, and utilities alike have hailed this solution as paving a way for new best practices across the utility industry.[334]

2. Linking Governance and Success

This case study of Austin is only illustrative, not determinative, of my theory's validity. An obvious objection is that I have chosen one of the most progressive cities in the United States for my example. But Austin's climate activism is precisely the point: I am interested in the connection between a city's popular will in favor of decarbonization,

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[329] *See City of Austin Expands Leadership in Solar Power*, AUSTIN ENERGY (Oct. 16, 2015), https://austinenergy.com/wps/portal/ae/about/news/press-releases/2015/city-of-austin-expands-leadership-in-solar-power/ (noting that on Thursday, October 15, 2015, the Austin City Council authorized Austin Energy to negotiate power purchase agreements for 400–450 MW of solar power, and also asked Austin Energy to solicit bids to build or purchase an additional 150 MW of solar power to come online by the end of 2019).

[330] *City of Austin Moves Forward with Solar Power*, AUSTIN ENERGY (Oct. 1, 2015) https://austinenergy.com/wps/portal/ae/about/news/press-releases/2015/city-of-austin-moves-forward-with-solar-power/ (quoting Larry Weis, Austin Energy General Manager).

[331] *See generally* Welton, *supra* note 213 (manuscript at 20).

[332] *See* Jocelyn Durkay, *Net Metering: Policy Overview and State Legislative Updates*, NAT'L CONF. STATE LEGISLATURES, http://www.ncsl.org/research/energy/net-metering-policy-overview-and-state-legislative-updates.aspx (last updated Dec. 18, 2014) ("In June 2014, South Carolina became the 44th state to enact net metering legislation.").

[333] *See* Herman K. Trabish, *Can a "Value of Solar Tariff" Replace Net Energy Metering?*, GREENTECH MEDIA (Aug. 24, 2012), https://www.greentechmedia.com/articles/read/can-a-value-of-solar-tariff-replace-net-energy-metering (describing Austin's use of the strategy).

[334] The "Value of Solar" innovation led to Austin Energy being named 2012 Public Power Utility of the Year by the Solar Electric Power Association. *See Awards*, AUSTIN ENERGY, http://austinenergy.com/wps/portal/ae/about/news/awards/ (last visited Nov. 12, 2016).

and its ability to accomplish its decarbonization aims. This project has little to say about those cities that choose to lag behind, doing only the minimum required of them by state and federal regulations. The only relevant point with respect to these places is that should their will to act on climate shift, and should this shift prove translatable through the medium of local politics, public utility ownership may be one of the most effective ways to move forward on tackling climate change.

Austin Energy's impressive decarbonization trajectory illustrates the necessarily iterative, experimental nature of electricity sector management under climate change. The city began with what it viewed to be an achievable target in 2007, committing its utility to modest investments in what seemed to be experimental renewable technologies at the time.[335] The utility proved able to accomplish its goals for renewable energy ahead of schedule, due in large part to major changes in the market for renewable energy in Texas.[336] During the same period, Austin's political appetite for decarbonization accelerated, as the need for action on climate was revealed to be ever more pressing by scientific reports and local weather disasters.[337] And the market for solar energy changed as well, as prices fell much faster than expected.[338]

As these technological and political changes unfolded, Austin's City Council found itself able to adjust goals and expectations for Austin Energy. At the same time, it has included an "Affordability Goal" in its requirements, which commits to keeping Austin Energy within the top 50% of Texas utilities with respect to affordability.[339] In this way, the city has iteratively arrived at consistently more ambitious climate change targets, but found ways to balance these targets with other aims. Similarly, its pioneering Value of Solar Tariff was able to strike a compromise on reliability, equity, and the promotion of renewable energy in ways that state proceedings struggle to do.[340]

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335 *See* Austin, City Council Res. 20070215-023 (2007) (setting a target of achieving 30% renewable energy by 2020).

336 *See, e.g.*, ELEC. RELIABILITY COUNCIL OF TEX., 2015 STATE OF THE GRID REPORT 21 (2016), http://www.ercot.com/content/news/presenations/2016/2015_StateoftheGridReport.pdf (showing wind energy's growth in Texas markets over the last fifteen years).

337 *See id.* at 2.

338 *See* Austin, City Council Res. 20140828-157 (2014) (citing the changing market for solar as a reason for enhancing solar requirements for Austin Energy).

339 *See id.* (describing City Council's adoption of an "Affordability Goal").

340 *See infra* notes 376–79 and accompanying text (describing why local experiments "less hampered by state regulatory strictures" are better models for action to address climate change).

Austin's model has now percolated up to state regulators, who are using or considering similar policies in a number of states.[341]

Public ownership has been critical in allowing Austin to create a utility that is consistently ranked as one of the greenest in the country.[342] Austin has made decarbonization a political priority, and the governance structure of its publicly owned utility allows this priority to be communicated clearly to its utility, and to be iteratively managed by political actors.[343] To be sure, Austin Energy does not have a frictionless relationship with its governing City Council: it frequently takes the side of ratepayers in arguing for reducing risk and managing expenses.[344] But it does not have the same incentives to spend considerable sums fighting decarbonization goals as private counterparts, given its nonprofit status and the fact that it answers directly to the City Council.[345] Austin Energy remains accountable on efficiency and economic grounds to a certain extent, because it operates on ratepayer revenues and makes an annual contribution to the City.[346] However, the links between City Council decisionmaking on energy policy and Austin Energy's rates and revenues are readily apparent to council members and the electorate.

Fortuitously, many of the same activities that cut carbon emissions most effectively—energy efficiency and demand response—also tamp down electricity rates by reducing overall infrastructure invest-

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341 *See, e.g.*, DIV. OF ENERGY RESEARCH, MINN. DEP'T OF COMMERCE, MINNESOTA VALUE OF SOLAR: METHODOLOGY (2014), http://mn.gov/commerce-stat/pdfs/vos-methodology.pdf (describing Minnesota's adoption of a value of solar tariff and development of a methodology for its application).

342 *See, e.g.*, U.S. Dep't of Energy, *Top Ten Utility Green Power Programs*, GREEN POWER NETWORK (Dec. 2014), http://apps3.eere.energy.gov/greenpower/resources/tables/topten.shtml (ranking Austin Energy second in the nation in quantity of renewable energy sold).

343 *Cf.* Sappington & Stiglitz, *supra* note 50, at 567–68 (asserting that one of the great benefits of public ownership is that government intervention is "less costly under public ownership than under private ownership," allowing government to "implement major policy changes when it is deemed necessary to do so").

344 For example, when the City Council recently considered how quickly to acquire solar power, Austin Energy General Manager Larry Weis told members of the council: "What you're really making a policy decision on isn't how much (power), it's how much risk . . . our sensitivity is how does it impact ratepayers?" Lilly Rockwell, *How Much Solar Power Should Austin Energy Buy?*, AUSTIN AM.-STATESMAN (Sept. 24, 2015, 6:10 PM), http://www.mystatesman.com/news/news/local/how-much-solar-power-should-austin-energy-buy/nnnLf/; *see also* MICHAEL O'BOYLE & SONIA AGGARWAL, IMPROVING PERFORMANCE IN PUBLICLY-OWNED UTILITIES 8 (2015) (describing Austin Energy's pushback to the City Council's original decarbonization aims, and the compromise ultimately struck).

345 *See* Wolak, *supra* note 13, at 231 (observing that under government ownership, there is a clear incentive to cover expenses, but after this goal is met, the entity may choose to pursue other goals over maximizing profits).

346 *See* AUSTIN ENERGY, LIGHTING THE WAY FOR AUSTIN'S FUTURE: AUSTIN ENERGY ANNUAL REPORT 2 (2013) (noting a $105.3 million transfer to the city's general fund).

ment.[347] This outcome, anathema to privately owned utilities counting on earning a rate of return on infrastructure investments, is more acceptable to publicly owned utilities focused on covering costs and meeting the political objectives of their governing council. Certainly, this more political form of accountability, which emphasizes fealty to elected principals rather than to profit,[348] can allow some elements of good management to slip through the cracks.[349] However, it works quite effectively when there is substantial political and media pressure placed on a certain issue, as is the case with climate change in localities like Austin.[350]

Several other city-owned or city-run utilities could be included alongside Austin Energy as decarbonization pioneers, including San Antonio's CPS Energy,[351] the Sacramento Municipal Utility District,[352] Seattle City Light,[353] the Burlington Electric Department,[354]

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[347] It is for this reason that publicly owned utilities also proved to be pioneers in implementing energy efficiency in the 1970s. Once publicly owned utilities had demonstrated the value of conservation to ratepayers, regulators at the state level began to require it of privately owned utilities as well. *See* HIRSH, *supra* note 64, at 155.

[348] *Cf.* Moe, *supra* note 49, at 765 (describing politics as a "chain of principal-agent relationships").

[349] *See id.* at 767 (noting that political mechanisms can "serve as partial substitutes" for the efficiency communicated by market signals); Shleifer & Vishny, *supra* note 307, at 996 (arguing that interest group pressures facing managers of public firms make them highly inefficient).

[350] *Cf.* Kelman, *supra* note 20, at 158 (noting that although publicly controlled functions are not subject to the pressures of the competitive marketplace, they have their own sources of pressure: politics and the media). Vickers and Yarrow observe that political control is effective when a state-owned enterprise's performance becomes a political priority. *See* Vickers & Yarrow, *supra* note 49, at 115; *see also* Moe, *supra* note 49, at 767 (describing the "decibel meter" that informs politicians about the feelings of constituency groups regarding bureaucratic performance).

[351] *See* Marita Mirzatuny, *Why Central Texas Is Becoming a Regional Clean Energy Leader*, GREENBIZ (May 23, 2014, 5:00 AM), https://www.greenbiz.com/blog/2014/05/23/why-central-texas-becoming-regional-clean-energy-leader (noting that CPS Energy is a leader in investing in renewables and in demand-side management); *Who We Are*, CPS ENERGY, https://www.cpsenergy.com/en/about-us/who-we-are.html (last visited Nov. 12, 2016) (describing the services provided by CPS, its mission, and its history).

[352] *See* Sacramento Mun. Util. Dist., *Working Toward a Sustainable Future*, SMUD, https://www.smud.org/en/about-smud/environment/climate-change.htm (last visited Feb. 19, 2016) (describing goal of cutting emissions to 10% of 1990 levels by 2050 and supplying 33% of power from renewables by 2020).

[353] *See The Nation's Greenest Utility*, SEATTLE.GOV: SEATTLE CITY LIGHT, http://www.seattle.gov/light/greenest/cleanhydro.htm (last visited Feb. 17, 2017) ("In 2005, City Light became the first electric utility in the country to achieve zero net greenhouse gas emissions.").

[354] *See* Wilson Ring, *100% of Power for Vermont City Now Renewable*, BOS. GLOBE (Sept. 15, 2015), https://www.bostonglobe.com/metro/2014/09/14/vermont-milestone-green-energy-efforts/fsLHJl4eoqv6QoFNewRYBK/story.html (describing how "100 percent of [Burlington's] electricity now comes from renewable sources").

and the City of Aspen Utilities.[355] All of these cities have climate ambitions above those of the state and federal government, and they are all decarbonizing their publicly owned electric utilities as a key method of achieving these goals. Moreover, the first (and as of late 2015, only) four cities to reach 100% renewable energy in the United States—Burlington, Aspen, Cincinnati, and Greensburg, Kansas—*all* have either a municipal utility or CCA.[356] Accordingly, as Austin and others illustrate, the advantages that outsourcing theory predicts that municipally owned utilities should have in managing decarbonization can indeed translate into practice.

V
Climate Localism and Public Energy

A. Why Local?

This Article has offered a defense of public ownership and control as superior management tactics, without addressing the scale at which this ownership or control should occur. As it happens, and for reasons related to history, legal structure, and politics, it is primarily localities that are clamoring for more public control in the electricity sector. In this Part, I specifically endorse this local control, as opposed to public ownership at the state or national level, both for its ability to harness certain cities' willingness to take on an outsized role in tackling climate change, and as a classic form of democratic experimentalism.

Particularly within the United States, with its polarized climate politics,[357] many cities' preferences on climate action differ from those of larger political units. It is these city-level preferences that drive movements for public ownership. Cities frequently ascribe to this fact

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[355] *See* Erica Robbie, *Aspen Is Third U.S. City to Reach 100% Renewable Energy*, Aspen Times (Sept. 1, 2015), http://www.aspentimes.com/news/17972193-113/aspen-is-third-us-city-to-reach-100 (describing "Aspen's transition to 100 percent renewable" energy).

[356] *See supra* notes 225, 351–52 and accompanying text; *see also Utility Services*, Greensburg, KS, https://www.greensburgks.org/residents/utility-services (last visited Feb. 19, 2016). Greensburg presents another fascinating example of the links between extreme weather, values, climate change, and municipal ownership: after a 2007 super tornado devastated 95% of the town, residents decided to rebuild the city as a model "green town" within an "overwhelmingly Republican-voting county where a great many people are entirely unconvinced that climate change is real." *See* Naomi Klein, This Changes Everything: Capitalism vs. the Climate 406–07 (2014).

[357] *See* Greg Sargent, *On Climate Change, Ideological and Partisan Polarization Hardens*, Wash. Post (June 16, 2015), https://www.washingtonpost.com/blogs/plum-line/wp/2015/06/16/on-climate-change-ideological-and-partisan-polarization-hardens/?utm_term=.35c1d71c547b (describing the wide "partisan and ideological divide over global warming").

a claim of democratic legitimacy, as in this statement by former Seattle Mayor Charles Royer: "[P]ublic ownership is not just another way of doing business. . . . It represents the ability of people to control their own lives in their own localities."[358]

Whether or not municipal ownership translates into true democratic legitimacy is a question beyond the scope of this Article. It may, but it also may be that the preferences of elites drive these cities' ambitious climate change goals.[359] In either event, cities active on climate change are taking steps that rational choice theory would not predict: They are choosing to go above and beyond state and federal requirements to contribute to solving a global problem that they, alone, cannot possibly fix.[360] Without delving deeply into the source of cities' motivation, we might still celebrate such altruistic impulses, given the gap that exists between current national pledges on carbon emissions reductions and the emissions necessary to actually stabilize the planet.[361]

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[358] Penn, *supra* note 193, at 33. Similarly, Austin Energy emphasizes that "community dialogue determines how Austin Energy defines its future." AUSTIN ENERGY, ROADMAP, *supra* note 322, at 6. And Boulder's reasons for municipalizing include to "increase citizen participation in democratic decisionmaking regarding their use of electricity." Verified Application of the City of Boulder at 9, Application of the City of Boulder for Approval of the Proposed Transfer of Assets from Pub. Serv. Co. of Colo. to the City & Associated Authorizations & Relief, No. 15A-0589 (Colo. Pub. Utils. Comm'n July 7, 2015).

[359] *Compare* Gerald E. Frug, *The City as a Legal Concept*, 93 HARV. L. REV. 1059, 1068 (1980) (arguing that cities serve as special sites in the quest for what Hannah Arendt called "public freedom," or "the ability to participate actively in the societal decisions that affect one's life" (quoting HANNAH ARENDT, ON REVOLUTION 115 (1962))), *and* Robert A. Dahl, *The City in the Future of Democracy*, 61 AM. POL. SCI. REV. 953, 964–65 (1967) (arguing that cities hold particular promise as sites in which to create robust, democratic, and participatory politics), *with* Roderick M. Hills, Jr., *Romancing the Town: Why We (Still) Need a Democratic Defense of City Power*, 113 HARV. L. REV. 2009, 2025–26 (2000) (reviewing GERALD E. FRUG, CITY MAKING: BUILDING COMMUNITIES WITHOUT BUILDING WALLS (1999)) (questioning the democratic advantage of localism), *and* Rubin, *The Myth*, *supra* note 56, at 2104 (expressing skepticism that local government politics evoke widespread participation). Jedediah Purdy takes a nuanced middle-ground view of these movements, celebrating them not as true populism but as driven by "activists aim[ing] to create new norms of climate regulation within small and rather insular populations at a time when such norms have little purchase in the larger society." Jedediah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy*, 119 YALE L.J. 1122, 1197 (2010).

[360] *See supra* notes 26 & 213 and accompanying text.

[361] *Cf.* Heather K. Gerken, *The Supreme Court, 2009 Term—Foreword: Federalism All the Way Down*, 124 HARV. L. REV. 4, 10 (2010) (describing the phenomenon of "federalism-all-the-way-down," in which "localities serve as staging grounds for national debates"). On the gap between national pledges and emissions reductions necessary for planetary stabilization, see UNITED NATIONS ENV'T PROGRAMME, THE EMISSIONS GAP REPORT 2016, at xvii (2016) ("Even if fully implemented, the unconditional Intended Nationally Determined Contributions are only consistent with staying below an increase in temperature of 3.2°C by 2100.").

Local ownership allows certain cities to move faster than their peers, acting as the vanguard of climate experimentalism.[362] And indeed, one of the key theories of local government law, famously championed by Charles Tiebout, is that one of the major advantages of keeping policies local is to allow people to "sort" themselves by policy preference.[363] Local utility ownership allows for a sort of altruistic sorting, where people supporting stronger governmental action on climate can move to localities offering strong goals, while people opposed can move away.[364] And local action on climate not only reflects preferences, but creates them: These city-level actions form a part of a larger, dynamic national conversation about our role as local and global citizens in an era of significant climate disruption.[365]

Local variation in climate preferences is likely to increase in the future. Although the problem of climate change is global, climate-related disasters are localized, and preferences for action on climate change may be closely linked to personal experiences of the problem. Boulder proves a case in point: As noted, popular support for municipalization soared after the city experienced devastating floods in the fall of 2013.[366] As more places come to personally experience climate-related disasters, we may see greater local differentiation in preferences for climate change action, and we should seek ways to harness this drive.[367]

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362 *Cf.* Dorf & Sabel, *supra* note 36 (arguing for greater use of "democratic experimentalism," in which localities experiment in government service provision and central regulators facilitate learning from one another's experimentation); Sarah Krakoff, *Planetarian Identity Formation and the Relocalization of Environmental Law*, 64 FLA. L. REV. 87, 107–08 (2012) ("In smaller communities, affinities of value, politics, and culture can overcome the epistemological and psychological barriers that inhibit the public at large.").

363 *See* Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416, 421–23 (1956) ("The consumer-voter may be viewed as picking that community which best satisfies his preference pattern for public goods.").

364 *Cf.* Dorf & Sabel, *supra* note 36, at 288 (arguing that democratic experimentalism can "change the reasons and evidence produced in public debate"); Purdy, *supra* note 360, at 1198 (observing that climate change may in fact be an expression of citizen desires to "(1) do the ecologically right thing and (2) form and participate in communities that do the same").

365 *See* Krakoff, *supra* note 363, at 87 (suggesting that environmentalism's "resurgence of localism" captures "expressions . . . of a planetary environmental consciousness"); Purdy, *supra* note 360, at 1122 (arguing that "choices by municipalities to adopt the Kyoto carbon-emissions goals" make sense as part of a larger argument about the relation of humans to nature).

366 Boulder's initial 2011 municipalization referendum passed by a narrow margin, but its 2013 rejection of a utility referendum to halt municipalization passed by nearly 70%. *See supra* note 4 and accompanying text.

367 *Cf.* Krakoff, *supra* note 363, at 87 (arguing that even environmental laws aimed at solving global problems should "include elements that foster localism" in order to achieve sustained behavior change and create at least some well-adapted communities).

Another reason we might encourage local utility ownership is because public ownership remains, for the moment, a promising experiment in climate change governance, not a conclusively superior form. Although I have offered strong theoretical reasons to believe that public managers may prove more adept at transitioning utilities to a decarbonized future, most are still in the early stages of implementing their ambitious agendas. It might be wise to observe these experiments' progress a while longer before any state overhauls its long-standing, complex regulatory structure in favor of a publicly owned grid.[368] Moreover, municipal utilities under the direct control of independent boards or city councils have significant adaptability advantages in the case that experiments prove ill-advised, thus allowing them to be bolder in their experimentation.[369]

Moreover, it is likely the case that we need not achieve full public ownership—and that full ownership is inadvisable—to fully decarbonize. Public ownership may reveal many of the impediments raised by private companies to more robust climate action to be self-interested excuses. But a significant enough number of publicly owned utilities advancing climate change agendas should be sufficient to put the lie to any overblown claims of impossibility or outrageous expense on the part of utilities. It is hard to know precisely how many efforts at public ownership this will require, but it is certainly less than one hundred percent.

At the same time, there are also reasons not to focus on local ownership or control of electricity as a stand-alone solution. Localities suffer from two significant challenges due to their scale. The first is that no city is an electric island—they are all interconnected to the surrounding grid. Cities boasting 100% renewable energy take advantage of this fact, by purchasing much of their renewable energy from outside their local service area.[370] At the same time, cities' use of

[368] Of course, one could also pile on valid political feasibility concerns about the likelihood of state takeovers of utilities.

[369] *See* Yair Listokin, *Learning Through Policy Variation*, 118 YALE L.J. 480, 483, 485 (2008) (explaining that "innovative high risk policies" are best implemented in contexts where policy can be easily reversed, and that the pursuit of such policies is preferable to a simple utilitarian welfare-maximization model in the case where learning is possible).

[370] Typically, this is done through the purchase of "renewable energy credits" (also sometimes called "certificates," and either way abbreviated to RECs). RECs are certificates issued by states to renewable energy producers, which can be sold separately from the underlying electricity produced. *See* Kelly Crandall, *Trust and the Green Consumer: The Fight for Accountability in Renewable Energy Credits*, 81 U. COLO. L. REV. 893, 895–96 (2010) ("One of the most prominent incentives in the United States is the renewable energy credit ('REC'), a commodity representing the environmental benefits of renewable energy and capable of being purchased by consumers or applied to state energy portfolio requirements separately from electricity."). Thus, a city can achieve 100%

clean energy means that there is more "dirty" (i.e., carbon-intensive) energy available for use outside of city boundaries. Thus, rather than actually reducing carbon emissions, city actions—absent a comparable emission reduction commitment at the state level—only *displace* emissions, rather than eliminating them. Consequently, cities acting alone, in scattershot fashion, will have limited actual impact on climate change unless they work as examples for larger jurisdictions to emulate.

A second problem of scale associated with city-led action comes from the nature of the projects that cities are able to pursue. Meeting the global challenge of decarbonization is likely to require significant investment in large-scale technological innovations, like CCS, nuclear, or utility-scale renewables.[371] Municipal utilities are often too small to undertake such projects,[372] although they might at least promote their construction by agreeing to enter long-term power purchase agreements. For such projects to succeed, supportive municipalities likely need state commission partners willing to commit ratepayer funding.[373]

Municipalization and CCA thus offer the most promise as essentially a prod, both to more robust state action on climate change and to higher-level conversations about the possibilities for, and shape of, decarbonization. Here, then, we can return to Franklin D. Roosevelt's conception of public power as a disciplinary check on private power and the state commission model, with each providing a "yardstick" against which to measure the other.[374] Under climate change, the yardsticking function of competing ownership models gains power, as

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renewable energy by purchasing enough RECs to cover its total electricity consumption, without actually converting its electricity supply to rely completely on renewables. But doing so essentially outsources renewable energy's "intermittency" problem by allowing a city to tap into nonrenewable sources during those times when wind and sun are not in ample supply. To serve as full demonstrations of renewable energy's potential to satisfy demand, cities would have to fully internalize the challenge of providing a constant renewable stream of power, which they might do by combining local renewable energy with storage. *See, e.g.*, Trabish, *Solar-plus-Storage*, *supra* note 183 (describing the first "municipal utility-owned solar-plus-storage project" in the United States, in which the Village of Minster, Ohio partnered with a private company to create a cost-saving solar storage combination system for the village).

371 *See supra* notes 147–57 and accompanying text (describing these alternative technologies).

372 However, municipalities working through Joint Action Agencies might reach the scale necessary to pursue certain projects. *See supra* note 99.

373 *See* Boyd & Carlson, *supra* note 22, at 880 (describing why ratepayer funding is likely necessary for these large-scale experimental technologies).

374 *See supra* note 232 and accompanying text. *See generally* Jeffrey L. Harrison, *Yardstick Competition: A Prematurely Discarded Form of Regulatory Relief*, 53 TUL. L. REV. 465 (1979) (describing the theory of yardstick competition).

the metrics that the yardstick must measure expand and the need for iterative learning becomes more pressing.

B. The State Role

My argument is that local public ownership of utilities may prove an effective component of helping cities to achieve their climate change goals, which in turn may prove important to global climate change mitigation efforts. If all this is true, then can scholars and officials at other levels of government sit back, clap, and let these local-preference-driven movements unfold where they will?

The control that states exercise over their local governments suggests not. "Dillon's Rule, the traditional measure for determining the scope of local power under state enabling legislation," allows local governments to exercise only those powers expressly granted to them by the state.[375] Not all states continue to apply Dillon's Rule, and many have adopted a "home rule" model, which reverses this presumption and grants localities the authority to govern all matters not expressly reserved for state regulation.[376] But even in these states, a locality can rarely decide to publicize its energy without state-level legal and regulatory proceedings. These proceedings allow state regulators and policy makers to exert considerable influence over local initiatives, for good or for ill.

How state-level regulators approach questions of municipalization and CCA depends on how they characterize these experiments. Some might take municipalization or CCA efforts as a repudiation of state authority or competence. This reaction, however, is misplaced: Climate-driven efforts at more public control are more a reflection of differing preferences across a state, as well as the regulatory constraints, discussed above, of state commission oversight of privately owned utilities. As such, states struggling to determine how to meet climate change goals might well view municipalization and CCA efforts as welcome relief valves. These more local efforts—whose costs are borne by a willing group of citizens, rather than the whole state—can "count" towards state targets, easing the burdens put on

375 Richard Briffault, *Our Localism: Part I—The Structure of Local Government Law*, 90 COLUM. L. REV. 1, 8 (1990).

376 *See id.*; *see also* Terrance Sandalow, *The Limits of Municipal Power Under Home Rule: A Role for the Courts*, 48 MINN. L. REV. 643, 644 (1964) (describing states' "resurgence of interest" in home rule); Trisolini, *All Hands on Deck*, *supra* note 14, at 694 (noting that local governments' powerlessness is often overstated). David Barron, however, complicates this picture, arguing that home rule "is not local legal autonomy," but rather "a mix of state law grants of, and limitations on, local power that powerfully influences the substantive ways in which cities and suburbs act." Barron, *supra* note 18, at 2263.

the rest of a state's populace.[377] Additionally, these local experiments, less hampered by regulatory strictures and private-public relations than state regulatory structures, often provide models for later state action, as with Austin's "Value of Solar Tariff."[378]

If state commissions and politicians come to view municipalization and CCA as welcome experiments that both contribute to and help shape state action on climate change, there are several steps they might take to embolden their progressive communities. One of the simplest ways to encourage municipalization or CCA is to clarify state rules around the process. Although most states explicitly provide for municipalization and allow cities to exercise eminent domain if necessary, some do not make these powers apparent.[379] For example, Santa Fe's 2014 push for municipalization was stymied by legal uncertainty regarding whether New Mexican cities could exercise eminent domain over preexisting utility assets.[380] Similarly, although some have opined that cities in states with home rule might have the inherent authority to engage in CCA,[381] it has flourished only in those states that explicitly legalize it.

Even where legal, municipalization and CCA efforts often falter in the face of robust utility opposition.[382] In Boulder, for example, Xcel reportedly spent nearly $1 million trying to defeat municipalization, outspending its supporters ten to one.[383] In an effort to counter

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377 *See, e.g.*, Matt Richtel, *San Diego Vows to Move Entirely to Renewable Energy in 20 Years*, N.Y. TIMES (Dec. 15, 2015), http://www.nytimes.com/2015/12/16/science/san-diego-vows-to-move-entirely-to-renewable-energy-in-20-years.html ("As the city moves to renewable energy, the State of California can begin to build its bank of carbon reductions and contribute to global goals.").

378 *See supra* notes 333–35 and accompanying text (describing Austin's Value of Solar Tariff and its recognition as a new best practice); *see also supra* notes 344, 353 and accompanying text (explaining that municipalities have also led the way on developing energy efficiency programs and on fully powering their systems with renewable energy).

379 *See supra* note 188 and accompanying text.

380 *See* An Ordinance Creating a New Chapter 29 SFCC 1987 to Establish Santa Fe Public Power, an Electric Public Utility, City of Santa Fe, N.M., Bill No. 2015- ___ (2014) (detailing the proposed Santa Fe Public Power); Daniel J. Chacón, *Plan for City-Owned Electric Utility Hits Snafu*, SANTA FE NEW MEXICAN (Jan. 6, 2015, 10:00 PM), http://www.santafenewmexican.com/news/local_news/plan-for-city-owned-electric-utility-hits-snafu/article_9a1a32bd-544a-566c-9611-20fd4ae67660.html (describing the controversy over the eminent domain power); Robert Walton, *Will Santa Fe Be the Next City to Municipalize Its Electric Utility?*, UTIL. DIVE (Nov. 25, 2014), http://www.utilitydive.com/news/will-santa-fe-be-the-next-city-to-municipalize-its-electric-utility/337072/ (describing "efforts to form a municipal utility in Santa Fe").

381 *See* Ridley, *supra* note 180, at 17–19 (suggesting that there may be preexisting authority for CCA in more states than is commonly perceived, via traditional franchising laws or other means of local control).

382 *See* Reiter, *supra* note 307, at 347 (describing the threat of litigation that hangs over municipalization efforts).

383 *See* Simon, *supra* note 4.

this dynamic, where a utility with market power is able to use its long-standing relationships to squelch new competitors, California has chosen to prohibit its privately owned utilities from spending ratepayer dollars lobbying or marketing against CCA in communities considering its adoption.[384] These regulations provide for a more balanced public platform upon which to debate the relative merits of public and private ownership. States wishing to promote more public energy, or fair competition between the two choices, would be wise to take note of this strategy.

Finally, commissions might consider using what legal interpretive leeway they have to promote municipalization, particularly when cities aim specifically to decarbonize. There is, to be sure, a legitimate reason for state commissions to hesitate to champion municipalization efforts: municipalization segregates the preexisting private utility's urban customers—who are often cheaper to serve—from its remaining rural customers, who may see their rates rise due to the city's exit.[385] But of course, this phenomenon only makes apparent the long-standing fact that ratepayers in urban areas often subsidize the cost of rural electricity. Although regulators may have good reasons for maintaining certain levels of cross-subsidization, municipalities breaking from state regulation in order to achieve climate change aims perform their own public good for the state that countervails these equity considerations. At the least, commissions should take note of this fact during their rulings on municipalization efforts.

C. Beyond Localism

Even if these suggestions are universally implemented, significant quantities of climate-oriented municipalizations and CCAs aren't

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[384] The California commission was careful not to limit *all* private utility speech regarding CCAs, but rather only misinformation and the use of ratepayer funding, which it asserted allowed it to avoid any First Amendment complications. *See* Decision Modifying Decision 05-12-041 to Clarify the Permissible Extent of Util. Mktg. with Regard to Cmty. Choice Aggregation Programs, Rulemaking 03-10-003, slip op. at 11–13 (Cal. Pub. Utils. Comm'n May 4, 2010), http://docs.cpuc.ca.gov/efile/PD/117347.pdf (proposed decision of Commissioner Peevey); *see also* S. 790 (Cal. 2011) (directing the PUC to adopt such regulations).

[385] *See* Thomas Smidt III, Case Note, United Water New Mexico, Inc. v. New Mexico Public Utility Commission*: Why Rules Governing the Condemnation and Municipalization of Water Utilities May Not Apply to Electric Utilities*, 38 NAT. J. 667, 694 (1998) (arguing that PUCs should consider the "public interest" outside the locality when authorizing municipalization efforts); *see also* Vickers & Yarrow, *supra* note 49, at 120 (noting that regulation has traditionally "suppress[ed] spatial (often urban versus rural) price differentials"). Such cross-subsidization challenges are less of a problem for CCAs, given that their consumers still contribute to private utility transmission and distribution cost recovery.

likely to blossom overnight. So it is important for commissions, and those who study them, to take note of this Article's central conclusion for a reason unrelated to the ultimate success of these "public energy" efforts. Delineating the role of supplying power as one that is increasingly unsuited for simple profit-driven incentive controls, and increasingly complicated to manage through periodic regulatory intervention, also has implications for the evolving design of state regulation.

Detailed exploration of these implications will be the topic of future work, but I offer here a few ideas about what commissions might learn from the changing nature of electricity provisioning. If public energy ownership or control remains elusive, regulators might at least attempt to regain control over some of the most politically fraught, challenging questions raised by climate change. Traditional rate case regulation, in which regulators set incentives and then let the utility proceed with limited interference until the next rate case several years in the future, will become increasingly difficult as iterative, experimental policy decisions within electricity planning become necessary. Two other options hold greater appeal, given the constraints.

"Integrated Resource Planning" (IRP), in which regulators require utilities to provide long-term plans for how to match supply and demand into the future, has largely been abandoned within states that have restructured.[386] In these states, merchant generators decide whether and where it is worth the risk of constructing new plants. But as several other scholars have suggested, it may be wise to reembrace IRP, or a new iteration of IRP, as a way for commissions to gain more oversight of decisionmaking around decarbonization.[387] For example, California has recently required a new round of IRP of its private utilities. As part of the state's effort to integrate more distributed resources into the California grid, it is requiring California utilities to file "distribution resource plan[s]" that "identify optimal locations for the deployment of these resources."[388] In this way, California is harnessing its planning authority to more directly oversee the ways in which its private utilities approach these new resources, which regulators know present thorny incentive problems. Although such IRP methods provide less direct oversight than public ownership or control, they get regulators closer to the policymaking role that out-

386 *See* Boyd, *supra* note 22, at 1694 (observing the decline of IRP in states embracing retail competition, although noting that it has frequently been replaced with other long-term planning requirements that focus on utility procurement decisions).

387 *See id.* at 1693–96 (explaining how "robust IRP processes can play important roles in guiding utility investments and practices toward a low-carbon future"); Scott, *supra* note 22, at 378 (suggesting the use of IRP "to address long-term systemic risks").

388 *See* CAL. PUB. UTIL. CODE § 769 (Deering 2016).

sourcing theory suggests they should play, by sharpening their focus on how utilities are approaching key issues, trade-offs, and assumptions.[389]

Outsourcing theory also suggests that commissions might revisit their tendency to set policies on a rate-case-by-rate-case basis. In rate cases, individual utilities have strong incentives to scuttle innovations that apply specifically to them.[390] Many of the state commissions achieving noteworthy climate-related innovations have done so via more general rulemakings, rather than rate cases.[391] This shift in legal form, from adjudicatory to rulemaking-type procedures, may allow for more satisfactory deliberation over the shape a state wants its future energy sector to take.[392]

It is worth ending with the observation that perhaps climate-oriented municipalizations and CCAs need not actually succeed in great numbers in order to serve their purpose. Instead, what is needed is the creation of a legal environment in which they have the potential to thrive, as "birch rods" to be raised in threat against utilities that prove recalcitrant on climate change.[393] One need only look to Minneapolis's experience in winning significant climate-related concessions from its private utility to see how threatening, but failing, to municipalize might at times itself be effective.[394] But such threats are credible only if states allow their innovative cities legal leeway to adopt truly public utility governance as a climate change tool.

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[389] *Cf.* Herman K. Trabish, *How California's Biggest Utilities Plan to Integrate Distributed Resources*, UTIL. DIVE (July 7, 2015), http://www.utilitydive.com/news/how-californias-biggest-utilities-plan-to-integrate-distributed-resources/401805/ (quoting a private utility engineer who explained that the planning process "definitely allowed for thinking with tools we haven't normally used").

[390] *See* William T. Gormley, *Public Advocacy in Public Utility Commission Proceedings*, 17 J. APPLIED BEHAV. SCI. 446, 448–49 (1981) (describing the "highly technical" process of ratemaking where businesses present "formidable adversaries" and frequently leave public interest groups unable to effectively participate); *see also* RAP, *supra* note 32, at 29–30 (describing the greater ease of participation in rulemakings as opposed to rate cases, and explaining that stakeholder collaboratives further increase opportunities for reaching "consensus on dealing with a major issue").

[391] In particular, for a description of ratemaking practices in New York, see STATE OF N.Y. DEP'T OF PUB. SERV., *supra* note 281, at 1–110.

[392] Richard K. Berg, *Re-examining Policy Procedures: The Choice Between Rulemaking and Adjudication*, 38 ADMIN. L. REV. 149, 163 (1986) (explaining that one of rulemaking's advantages is that it provides "wider notice and broader opportunities for participation").

[393] *See supra* note 232 and accompanying text (referencing Franklin D. Roosevelt's conception of the public as a "birch rod" that serves as a check on utilities).

[394] *See supra* notes 201–04 and accompanying text (describing Minneapolis's failed attempt to municipalize and subsequent clean energy deal with the private utility Xcel).

Conclusion

Electricity regulation, long considered squarely a matter of regulated industries law, may have much to learn from administrative law's attention to outsourcing theory. The converse is also true.

Scholars interrogating outsourcing have done an excellent job of highlighting the ways in which the propriety of outsourcing extends beyond a task's particular characteristics. They have shown how the outsourcing of certain tasks, and the accretion of outsourcing more generally, risks "sacrific[ing] public values, achieving market efficiency by using market ruthlessness."[395] In no small part because of these critiques, official policy on outsourcing has shifted: President Obama reversed decades of outsourcing policy with a 2009 presidential memorandum that raised concerns about contractors "performing inherently governmental functions."[396] Resulting guidance called for agencies to "be alert to situations in which excessive reliance on contractors undermines the ability of the federal government to accomplish its missions," and to consider "in-sourcing" those capacities "essential to effective government performance."[397]

These well-intentioned reforms face a challenge that electricity governance over the past 125 years makes clear: we should not presume fluidity, or reversibility, in contracting out. The municipalization battles now occurring speak to the difficulty of reclaiming for the state functions that have been long outsourced.

This points to a larger problem in our scholarly analyses of outsourcing. As Jody Freeman has observed, much of our outsourcing analysis—mine here included—is consequentialist, focused on whether the consequences of contracting out are likely to be favorable or not.[398] But consequentialist analysis provides only a snapshot.[399] At the time of its outsourcing, electricity provisioning proved a task reasonably suited to contracting out, at least under a regulated monopoly

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395 Rubin, *Possibilities and Limitations*, *supra* note 38, at 927 (identifying this common critique of privatization).

396 Memorandum on Government Contracting, 2009 Daily Comp. Pres. Doc. 2 (Mar. 4, 2009).

397 Memorandum from Peter R. Orszag, Dir., Office of Mgmt. & Budget, Exec. Office of the President, to the Heads of Dep'ts and Agencies, No. M-09-26, Managing the Multisector Workforce 1–2 (July 29, 2009).

398 Jody Freeman, *The Private Role in Public Governance*, 75 N.Y.U. L. Rev. 543, 631 n.368 (2000).

399 Mashaw makes a related point, observing that contracting out may be difficult to undo because the "'meaning' of certain issues changes from a question of collective action to one of private choice or preference," and because public sector capacities become diminished. *See* Mashaw, *supra* note 51, at 137–38.

framework: It was basic commodity provisioning, subject to economies of scale and in need of efficient delivery.

But fast-forward a hundred years and the story looks quite different: government's normative aims have shifted in response to climate change. These shifts render the task of electricity provisioning considerably less straightforward than it used to be, in ways that prove challenging to manage under a contractual model. States could not have predicted such changes in governmental aims at the moment they chose to contract out electricity, rather than rely upon municipal service, in the early 1900s.

Electricity governance, then, illustrates the risks of consequentialist, point-in-time analyses of whether government should "make or buy" particular goods and services. Societal preferences, exigencies, and goals change, but outsourced functions may not be easy to reclaim. This conclusion does not suggest that government should jealously guard all services in-house, lest it rethink the decision to privatize decades in the future. But it does suggest that scholars and regulators should give careful thought to the mechanisms and procedures of outsourcing, to increase the fluidity of decisions made to relinquish governmental responsibilities to private delivery. When values do shift—as they have in electricity governance—and the appeal of governmental provisioning reemerges, we should have the ability to insist upon more public control.