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"100 Percent Renewable": Company Pledges and State Energy Law

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"100 PERCENT RENEWABLE": COMPANY PLEDGES AND STATE ENERGY LAW

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Abstract

Corporate demand for clean power emerged with new force and influence in postelection energy policy. As the Trump Administration decisively reemphasized fossil fuels, leading companies countered by pledging to power their operations with renewable energy. This Article assesses recent regulatory reforms at the state level responsive to these corporate pledges and considers the barriers and opportunities the reforms present for companies, for states, and for emissions reduction goals. It traces how corporate energy purchasing has evolved and how new policy innovations are extending that trajectory across a growing number of states. With a focus on reforms expanding access to renewable energy in states with traditional regulatory regimes, the Article situates the role of corporate demand for clean power in the broader context of energy transition policy. What risks or benefits might there be if policy shifts increase the role of corporate consumers in the U.S. electric power sector? Recognizing the trend's potential for carbon emissions reduction, the Article considers how corporate demand for clean power is changing the role of commercial and industrial consumers on the modern grid and unpacks "100% renewable" claims. Turning to electricity's legal and physical infrastructure, the Article weighs implications of increased nonutility influence and dispersed decision-making in energy policy.

INTRODUCTION

Five years ago, Google made headlines for pledging to buy enough renewable energy to match 100 percent of the electricity its operations consume.[1] For a

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[1] GOOGLE, ACHIEVING OUR 100% RENEWABLE ENERGY PURCHASING GOAL AND GOING BEYOND 1 (2016), https://static.googleusercontent.com/media/www.google.com/en//green/pdf/achieving-100-renewable-energy-purchasing-goal.pdf [https://perma.cc/RV8M-XHVA].

company like Google, with data centers around the world that run twenty-four hours a day, the carbon footprint from electricity is massive. In 2017, the company announced it had reached its goal, buying 2.6 gigawatts (GW) of renewable energy to correspond with its global electricity consumption.[2]

In reaching this goal, Google celebrated its status as "the largest corporate renewable energy buyer on the planet," but the company is not alone in this ambition.[3] Alongside Google are other big-name corporations—such as Facebook, Amazon, Microsoft, and IKEA—seeking low-cost renewable energy and other means to reduce their energy use.[4] These companies garner attention for their size and brand recognition, but the demand is not limited to the big names. A survey of companies in 2016 indicated over 70 percent of respondents were actively working to acquire clean energy.[5] This corresponds with trends in U.S. stockholder proposals this year, over half of which addressed climate and other environmental concerns.[6]

Corporate demand for clean power emerged with force and influence in postelection energy policy as a counterweight to the Trump Administration's decisive reemphasis of fossil fuels. States have been regrouping in the wake of the near-miss Clean Power Plan, the high-profile Obama Administration rule to limit carbon emissions from power plants. As some of electric utilities' largest customers, companies that want access to renewable energy are in a position—absent regulatory barriers—to drive renewable energy development with the scale of their demand. Some, in frustration with regulatory barriers, have sought ways to produce utility-scale electricity on their own.

Although access to renewable energy is desirable for many companies, the law of most states has allowed only circuitous linkages between corporate customers and renewable energy producers. Acrobatic legal arrangements have bypassed some of these barriers, but only for the biggest corporate consumers. Legal reform in this area warrants attention, not just so individual companies can operate more cost-effectively and responsibly – more importantly, the demand has potential to

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[2] *Id.*

[3] *Id.*

[4] For discussion of this demand, see *infra* Section II.B.

[5] MEISTER CONSULTANTS GROUP, ADVANCED ENERGY ECON. INST., OPPORTUNITIES TO INCREASE CORPORATE ACCESS TO ADVANCED ENERGY: A NATIONAL BRIEF 4 (2016) [hereafter AEEI, OPPORTUNITIES], https://info.aee.net/opportunities-to-increase-corporate-access-to-advanced-energy-report [https://perma.cc/S5EE-S5NX]; *see also* WORLD WILDLIFE FUND ET AL., POWER FORWARD 3.0: HOW THE LARGEST U.S. COMPANIES ARE CAPTURING BUSINESS VALUE WHILE ADDRESSING CLIMATE CHANGE 2 (2017), https://www.worldwildlife.org/publications/power-forward-3-0-how-the-largest-us-companies-are-capturing-business-value-while-addressing-climate-change [https://perma.cc/BVD3-6MZH] (finding 63% of Fortune 100 companies and 44% of Fortune 500 companies had set "targets to reduce greenhouse gases (GHG), improve energy efficiency, and/or increase renewable energy sourcing").

[6] James R. Copland & Margaret M. O'Keefe, *Climate-Change Proposals Break Through*, PROXY MONITOR, http://www.proxymonitor.org/Forms/2017Finding1.aspx [https://perma.cc/UMY8-XWWF].

accelerate the low-carbon energy transition. The Advanced Energy Economy Institute estimates nearly 450 GW of renewable energy could be developed—quadrupling wind and solar capacity in the U.S.—by meeting half the nation's commercial and industrial electricity demand with renewable electric power.[7] With commercial and industrial customers accounting for over 60 percent of U.S. electricity consumption, the trend has real policy significance for the goal of accelerating clean energy in the near term.[8] This trend, as some states now realize, also presents a unique economic opportunity. States that can ease regulatory pathways and connect companies with renewable energy stand to benefit as companies increasingly seek to locate facilities close to where the clean electricity they use is generated.

This Article explores the barriers and opportunities for states, companies, and emissions reduction goals that form the impetus for regulatory reforms responsive to corporate demand for clean power. Part I begins by situating the large electricity consumer within electric utility regulation. The commercial and industrial customer has long occupied a tailored space in electricity ratemaking and continues to represent a unique block of influence in newer realms, such as demand-side management and energy efficiency policy. Part I provides the historical and regulatory context that informs the modern developments this Article explores. With this grounding, it then details the corporate demand for clean power that is driving state-level reform today—companies' pledges, motivations, and solutions—and what has made accessing renewables difficult in much of the country, where traditional utility regulatory structures still dominate. Part I also assesses the trend in relation to the increased emphasis on diverse subfederal and nongovernmental forces following the U.S. repudiation of the Paris Climate Accord.

Part II provides a primer on corporate renewable energy purchasing as it has developed to date and the leading policy innovations shaping reform debates across the states. An expanding suite of policy instruments can improve the regulatory environment for corporate consumers of electricity, from new green rate designs (also called tariffs in the industry) and power purchase agreements for large renewable projects, to measures that invigorate business development of distributed energy resources. With a focus on traditionally regulated states, it addresses state regulatory variability and factors that may affect a state's amenability to policy innovations in this sphere.

Part III then evaluates the role of corporate demand for clean power in the broader context of the modern energy transition. Perhaps most notably today, this transition is characterized by the continued shift to lower carbon energy resources and a widely conflicted state and federal policy environment. High-stakes debate over what a modern energy sector should be has launched an in-depth reassessment

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[7] AEEI, OPPORTUNITIES, *supra* note 5, at 4.

[8] *See generally Electricity Explained: Use of Electricity*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/energyexplained/index.php?page=electricity_use [https://perma.cc/T9PA-6H9K] (last updated Apr. 30, 2018) (noting that the percentage of electricity sales to commercial classes was 36.6 percent and to industrial classes was 25.7 percent).

of the traditional utility business model, electric grid operation and design, and what energy services will be valued most by consumers in the future. As one among many moving parts in this transition, meeting corporate demand for clean power represents part of a broader shift toward increasingly active consumers on the grid. With that frame, Part III considers potential implications of the trend for further dispersal of decision-making in energy policy, of nonutility influence in integrated resource planning for electric power at the state level, and of equity within and across electricity customer classes. The Article concludes that the potential value and risks of this trend for the low-carbon shift hinge on whether states meaningfully pair the goal of emissions reduction with economic development in the design of legal instruments for reform. Finally, while appreciating the value of corporate demand, the Article cautions against overly celebrating the 100-percent-renewable claims companies make in light of their ongoing reliance on fossil fuels and nuclear energy.

I. CORPORATE DEMAND FOR CLEAN POWER

Corporate demand for renewable energy has been growing for several years, but this demand came into clearer focus against a backdrop of the Trump Administration's concerted efforts to revive the flagging coal industry.[9] This Part situates the trend in relation to shifting U.S. energy policy. To understand the significance of corporate demand in electricity regulation, it is important to look beyond the immediate trend making headlines today to understand the historical role of commercial and industrial consumers on the grid. By highlighting the unique position of large electricity customers in several exemplary areas critical to the modern energy transition, this Part provides that needed context before turning attention to current demand for clean power among these large consumers: What is motivating companies to seek renewable energy sources? What is the scale of demand? How have these companies responded to the shifting political environment affecting the energy sector? How have companies worked with and around existing regulatory structures to achieve their clean energy goals?

A. The Corporate Electricity Consumer

Commercial and industrial consumers have long occupied a unique position on the grid. Commonly referred to in the industry as "C&I," these corporate consumers interact with utilities, project developers, and wholesale markets in ways that stand out as markedly different from residential electricity customers.

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[9] *See, e.g.*, President Donald Trump, Remarks at the Unleashing American Energy Event, (June 29, 2017), https://www.whitehouse.gov/briefings-statements/remarks-president-trump-unleashing-american-energy-event/ [https://perma.cc/G9JC-GSHY] ("We have finally ended the war on coal."); Exec. Order No. 13,783, 82 Fed. Reg. 16093 (2017) (discussing lifting the coal leasing moratorium on federal land).

Although residential customers are the most numerous, they only account for 37 percent of electricity demand.[10] Commercial and industrial users account for 63 percent of electricity consumption (36 percent and 27 percent respectively).[11] The Federal Energy Regulatory Commission (FERC) considers commercial use to be broadly inclusive of "office buildings, hotels and motels, restaurants, street lighting, retail stores and wholesale businesses and medical, religious, educational, and social facilities."[12] In contrast, the industrial sector includes such uses as "manufacturing, construction, mining, agriculture and forestry operations."[13]

Because of this profile, companies are important consumers from a range of perspectives. From the perspective of utilities, having one large commercial or industrial customer may be equivalent to serving many residential customers—thus, based on the significance of their load, commercial and industrial customers have leverage in securing advantageous programs. States and local governments may have an economic interest in attracting or retaining a commercial or industrial enterprise. In addition, changes to the way commercial and industrial customers use electricity can have an outsized effect on environmental impacts of the electric power sector. Industrial customers are responsible for significant greenhouse gas emissions, which, although not all the result of electricity consumption, may be reduced if there are clear regulatory pathways to renewable energy access.[14]

Three areas highlight the unique position of commercial and industrial customers in the electricity sector, each of which is addressed here briefly in turn: (1) ratemaking, (2) demand response, and (3) energy efficiency.

1. Ratemaking

The unique electric power needs of commercial and industrial enterprises are routinely accounted for in the ratemaking context. Commercial and industrial customers have long been charged specialized rates for electricity they consume, because of the scale and consistency of their demand, among other factors.

Electricity rates are the mechanism by which utilities recover the cost of providing electric power to consumers and earn revenue for shareholders. State public utility commissions set retail electricity rates—that is, the price customers pay their utility per kilowatt-hour (kWh) of electricity they use. Rate design typically groups customers into classes based on their demand requirements and other

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[10] DIV. OF ENERGY MKT. OVERSIGHT, OFFICE OF ENF'T, FED. ENERGY REGULATORY COMM'N, ENERGY PRIMER: A HANDBOOK OF ENERGY MARKET BASICS 43 (2015), https://www.ferc.gov/market-oversight/guide/energy-primer.pdf [https://perma.cc/XU7W-DQ2T] [hereinafter FERC, ENERGY PRIMER].

[11] *Id.*

[12] *Id.*

[13] *Id.*

[14] *See* U.S. ENERGY INFO. ADMIN., U.S. ENERGY-RELATED CARBON DIOXIDE EMISSIONS, 2017, at 7 fig.4 (2018), https://www.eia.gov/environment/emissions/carbon/pdf/2017_co2analysis.pdf [https://perma.cc/GW5W-BWDC] (discussing energy-related carbon dioxide by end-use sectors from 1990–2017).

common characteristics. The common classes are residential, commercial, and industrial.[15] Utilities may apply different rates to different classes—indeed, rates set for different classes need not be equally profitable for the utility, so long as service is provided under the same basic conditions, the rates for each class are just and reasonable, and the rates for one class do not amount to discrimination against another class.[16]

Compared to the average American home, which consumed an average of 867 kWh/month in 2017,[17] commercial customers averaged just under 6,200 kWh/month, although large businesses consume much more than this—a large retail building, for instance, may use ten times that amount.[18] Average monthly consumption among industrial customers exceeds both classes at over 97,000 kWh/month.[19] With commercial and industrial classes representing the majority of the total U.S. electric load, users within these classes represent substantially more consumption per account than residential customers.[20] The ratio of customer class to

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[15] *See* G. PHILIP NOWAK & SHARON L. TAYLOR, 1 ENERGY LAW AND TRANSACTIONS § 2.08 RATE DESIGN (2018) (describing the common methods used to allocate demand costs among different customer classes).

[16] *See* 16 U.S.C. § 824d(b) (2018) ("No public utility shall, with respect to any transmission or sale subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service."). Courts have explained the same principles as they apply at the state level. *See* Phila. Suburban Transp. Co. v. Pa. Pub. Util. Comm'n, 281 A.2d 179, 184–85 (Pa. Commw. Ct. 1971) (explaining, with reference to state-regulated retail rates, "[t]he requirement is merely that rates for one *class* of service shall not be unreasonably prejudicial and disadvantageous to a patron in any other *class* of service. Before a rate can be declared unduly preferential and therefore unlawful . . . [t]here must be an advantage to one at the expense of the other." (emphasis added) (quoting Alpha Portland Cement Co. v. Pub. Serv. Comm., 84 Pa. Super. 255, 272 (1925))). *See generally* NOWAK & TAYLOR, *supra* note 15 (discussing rate design and customer classes).

[17] *Frequently Asked Questions: How Much Electricity Does an American Home Use?*, U.S. ENERGY INFO. ADMIN. (Oct. 26, 2018), https://www.eia.gov/tools/faqs/faq.php?id=97&t=3 [https://perma.cc/4UEH-R6JH].

[18] U.S. ENERGY INFO. ADMIN., 2017 AVERAGE MONTHLY BILL – COMMERCIAL (2017) https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_b.pdf [https://perma.cc/C3NW-B8RS]; *see also* Mark MacCracken, *What Retailers Need to Know About Their Energy Bill — and How to Lower It,* CHAIN STORE AGE (Oct. 5, 2017), https://www.chainstoreage.com/store-spaces/what-retailers-need-know-about-their-energy-bill-and-how-lower-it/ [https://perma.cc/P8FL-7VVC].

[19] U.S. ENERGY INFO. ADMIN., 2017 AVERAGE MONTHLY BILL – INDUSTRIAL (2017), https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_c.pdf [https://perma.cc/287B-KMV4].

[20] *Electricity Data Browser: Number of Customer Accounts: All Sectors Nov. 2017*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/electricity/data/browser/#/topic/56?agg=0,1&geo=g&endsec=vg&freq=M&start=200101&end=201711&ctype=map&ltype=pin&rtype=s&pin=&rse=0&maptype=0 [https://perma.cc/UY9N-RGC4] (noting that there are

consumption depends on the scale of commercial and industrial activity in a service area. In some areas, this ratio can be stark—for the New England provider Eversource Energy, for example, 2 percent of customers purportedly account for 80 percent of demand.[21]

Although rates vary over time, industrial customers in the U.S. historically pay the lowest price per kWh, residential customers pay the highest, and commercial customers typically pay a price in between. Based on the data available as of this writing, the Energy Information Administration reported average retail electricity prices in November 2017. They were 6.79 cents/kWh for industrial customers, compared with 10.55 cents/kWh for commercial, and 13.01 cents/kWh for residential customers.[22] Industrial customers' lower rates reflect the fact that their load demand is higher and more consistent, and they can receive electricity at higher voltage levels than other end users.[23] With the most predictable, large-volume load, commercial and industrial customers may be approved for so-called interruptible rates, which provide a discount to the consumer in exchange for an agreement to reduce electricity use at the utility's request during peak demand.[24] This is one approach to "demand response," discussed below.

Rates also vary from state to state. For example, electricity consumption by the average home in Louisiana is more than twice that of the average home in Hawaii.[25] This disparity is understandable when comparing the difference in residential retail prices state by state—prices in Hawaii are roughly three times higher than prices in Louisiana.[26] While prices vary by state for commercial and industrial class rates as they do for residential customers,[27] utilities will continue to regard commercial and

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roughly 133 million residential accounts compared to approximately 18.4 million commercial and 830,000 industrial accounts).

[21] AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., FACT SHEET: INDUSTRIAL EFFICIENCY PROGRAMS CAN ACHIEVE LARGE ENERGY SAVINGS AT LOW COST (2016) http://aceee.org/fact-sheet/low-cost-ieep [https://perma.cc/W6ZV-HB67] [hereinafter ACEEE, FACT SHEET: INDUSTRIAL EFFICIENCY PROGRAMS].

[22] *Electricity Monthly Update with Data for November 2017,* U.S. ENERGY INFO. ADMIN. (Jan. 24, 2018), https://www.eia.gov/electricity/monthly/update/end_use.php#tabs_sales-3 [https://perma.cc/E3J2-6NQR].

[23] FERC, ENERGY PRIMER, *supra* note 10, at 43.

[24] 7 ENERGY LAW AND TRANSACTION SCOPE: UNIT IV 199 (2017) (indicating such rates apply to interruptible load, which represents large-volume "consumer load that, in accordance with contractual arrangements, can be interrupted at the time of annual peak load by the action of the consumer at the direct request of the system operator").

[25] *Frequently Asked Questions: How Much Electricity Does an American Home Use?*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/faqs/faq.php?id=97&t=3 [https://perma.cc/4UEH-R6JH].

[26] *Rankings: Average Retail Price of Electricity to Residential Sector, November 2018 (cents/kWh)*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/state/rankings/#/series/31 [https://perma.cc/DL78-UPUL] (showing that Hawaii pays 32.46 cents/kWh compared to Louisiana at 9.11 cents/kWh).

[27] *Average Retail Price of Electricity: All Sectors Nov. 2017*, U.S. ENERGY INFO. ADMIN., https://bit.ly/2VmDc2o [https://perma.cc/647H-PYCH].

industrial consumers as important, as those classes are projected to increase energy consumption, including electricity, between now and 2040.[28] During this period, residential consumption is projected to flatten, with industrial and commercial consumption increasing at 0.7 percent and 0.5 percent annual growth rate, respectively.[29]

2. Demand Response

Commercial and industrial consumers have played a central role in the development of one of the most important trends in the modern energy transition—so-called "demand response" strategies for reducing electricity consumption.[30] The concept of demand response is fairly straight forward—through communication, payment, or other incentives, electricity customers can reduce electricity use on demand at times that yield strategic economic, operational, or reliability benefits to the grid.[31] Typically, as the Supreme Court described in 2016's major demand response ruling, *FERC v. EPSA*, this is accomplished when wholesale market operators (or utilities, as the case may be) "pay electricity consumers for commitments *not* to use power at certain times."[32] In this way, Justice Kagan explained, "wholesale market operators can sometimes—say, on a muggy August day—offer electricity both more cheaply and more reliably by paying users to dial down their consumption than by paying power plants to ramp up their production."[33] In this way, it is possible, depending on the scale of demand response achieved, to match supply and demand more accurately and economically, mitigate the impact of intermittent renewable energy production, and even reduce the need for new power plants to meet peak demand.[34]

Commercial and industrial customers have been the focus of most demand response efforts since the concept's earliest implementation, and this remains true today.[35] The reasons for this stem from the basic profile of these customer classes—

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[28] *U.S. Energy Demand Slows Except for Industrial, Commercial Sectors*, U.S. ENERGY INFO. ADMIN. (Apr. 29, 2015), https://www.eia.gov/todayinenergy/detail.php?id=21012 [https://perma.cc/6XF8-AJV8].

[29] *Id*.

[30] For an explanatory account of demand response and its evolution from ad hoc utility-customer bargaining to a key fixture in the modern electricity sector, see generally Joel B. Eisen, *Demand Response's Three Generations: Market Pathways and Challenges in the Modern Electric Grid*, 18 N.C. J.L. & TECH. 351 (2017).

[31] FERC explains demand response more precisely as "the reduction in consumption of electricity by customers from their expected consumption in response to either reliability or price triggers where the customer foregoes power use for short periods, shifts some high energy use activities to other times, or uses onsite generation." FERC, ENERGY PRIMER, *supra* note 10, at 44.

[32] FERC v. Elec. Power Supply Ass'n, 136 S. Ct. 760, 784 (2016) (confirming FERC's authority to regulate wholesale demand response transactions).

[33] *Id.* at 767.

[34] For more on benefits, see Eisen, *supra* note 30, at 367–68.

[35] *Id.* at 365 n.36.

significant electric load, compared to residential use, from a smaller group of consumers, making individualized or customer-class communications more feasible but also more meaningful in terms of curtailed demand. Newer aggregation approaches can assemble a demand "block" for reduction across a swath of smaller load points. As *FERC v. EPSA* describes, wholesale aggregation typically involves "aggregators of multiple users of electricity, as well as large-scale individual users like factories or big-box stores, submit bids to decrease electricity consumption by a set amount at a set time for a set price."[36] Large commercial and industrial customers are critical to these programs because their electricity consumption offers the greatest potential for grid balancing and strategic management of peak demand.[37] Reducing peak demand makes it possible to avoid using more expensive generation facilities and ease the strain of high demand on transmission and distribution lines.[38]

3. Energy Efficiency

Large electricity consumers benefit economically from energy efficiency measures and also offer outsized benefits to state energy efficiency programs. Over half the states have enacted Energy Efficiency Resource Standards (EERSs), which set long-term energy saving targets that utilities must meet, typically through customer energy efficiency programs, including for commercial and industrial consumers.[39] Essentially, EERSs require a reduction in electricity sales through increased energy efficiency.

Energy efficiency allows activities that depend on electricity to be conducted as usual but with lower energy consumption. Although energy efficiency is a "demand side" resource, in contrast to demand response—which may shift, rather than reduce consumption, and can be used strategically in response to real-time conditions—energy efficiency reduces demand for electricity overall. EERSs are

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[36] *See Elec. Power Supply Ass'n,*136 S. Ct at 770.

[37] *See Demand Response Saves Electricity During Times of High Demand*, U.S. ENERGY INFO. ADMIN. (Feb. 8, 2016), https://www.eia.gov/todayinenergy/detail.php?id=24872 [https://perma.cc/FKL6-6HDC] (showing sectoral composition of demand response programs, 2014). Industrial consumers afforded 54 percent of actual peak savings, compared with 21 percent from commercial and 25 percent from residential consumers. *Id. See also* FED. ENERGY REGULATORY COMM'N, ASSESSMENT OF DEMAND RESPONSE AND ADVANCE METERING 17 (2017), https://www.ferc.gov/legal/staff-reports/2017/DR-AM-Report2017.pdf [https://perma.cc/747C-XHRU] (describing the contributions of each customer class to peak and overall energy savings through demand response).

[38] *Demand response saves electricity during times of high demand*, U.S. ENERGY INFO. ADMIN (2016) https://www.eia.gov/todayinenergy/detail.php?id=24872 [https://perma.cc/FKL6-6HDC].

[39] The American Council for an Energy-Efficient Economy (ACEEE) tracks state EERS and annual electric savings targets. For state-by-state information, see AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., STATE ENERGY EFFICIENCY RESOURCE STANDARDS (2017), https://aceee.org/sites/default/files/state-eers-0117.pdf [https://perma.cc/WS76-3LDY].

typically funded by ratepayers to approximate what the utility would otherwise have received through the lost electricity sales.[40]

Here again, commercial and industrial consumers are in a position of importance because of the scale of their electricity consumption. According to the American Council for an Energy Efficient Economy, "[f]or virtually any utility system, large-customer energy efficiency is the cheapest energy resource available."[41] Averaging across state efficiency programs, commercial and industrial customers account for 55 percent of energy savings.[42] The industrial sector in particular represents a more significant savings potential per program dollar than other customer classes.[43] Although industrial consumers have resisted being subject to EERSs-related fees under one-size-fits-all programs, which may seem to duplicate efficiency investments they make independently, some states have met this objection by allowing large customers to "self-direct" funds for energy efficiency in ways that work for the individual firm.[44]

Looking to the future, the role of large electricity consumers will likely become more pronounced as states improve and expand energy efficiency programs. A recent study by the Electric Power Research Institute estimates over 740,000 GWh of energy efficiency economic potential from 2016 to 2035 nationwide across all three classes.[45] For states, this means cost-effective savings are possible ranging from 12 percent (Missouri) to 21 percent (Florida) in 2035, and over twenty-six states with savings potential over 15 percent on this time horizon.[46] Whether these savings can be realized will depend on state programs effectively meeting the needs of commercial and industrial consumers.

Taken together, these examples show that, with their unique position on the grid, corporate customers have had a significant role in the development of energy policy for some time.

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[40] *See* U.S. DEP'T OF ENERGY, SEE ACTION GUIDE FOR STATES: ENERGY EFFICIENCY AS A LEAST-COST STRATEGY TO REDUCE GREENHOUSE GASES AND AIR POLLUTION AND MEET ENERGY NEEDS IN THE POWER SECTOR 30–38 (2016), https://www4.eere.energy.gov/seeaction/system/files/documents/pathways-guide-states-final0415.pdf [https://perma.cc/MDZ2-5UX6].

[41] AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., FACT SHEET: MYTHS AND FACTS ABOUT INDUSTRIAL OPT-OUT PROVISIONS (2016) [hereinafter ACEEE, FACT SHEET: MYTHS], http://aceee.org/sites/default/files/ieep-myths-facts.pdf [https://perma.cc/PUS7-TSMT].

[42] *Id.*

[43] ACEEE, FACT SHEET: INDUSTRIAL EFFICIENCY PROGRAMS, *supra* note 21.

[44] ACEEE, FACT SHEET: MYTHS, *supra* note 41; *see also* ACEEE, FACT SHEET: INDUSTRIAL EFFICIENCY PROGRAMS, *supra* note 21 (detailing features of the most successful industrial energy efficiency programs).

[45] ELEC. POWER RESEARCH INST., STATE LEVEL ELECTRIC ENERGY EFFICIENCY POTENTIAL ESTIMATES xi (2017), https://energy.gov/sites/prod/files/2017/05/f34/epri_state_level_electric_energy_efficiency_potential_estimates_0.pdf [https://perma.cc/K6LZ-7ADU].

[46] *Id.* (noting that estimates for 2035 are relative to adjusted baseline sales and reflect regional similarities due to "sector composition and climate zone").

B. Clean Energy Pledges and Corporate Demand

Commercial and industrial consumers have expanded their influence in the electricity sector beyond the demand side of the meter with increasing interest in access to electricity generated with renewable energy. Google's announcement in 2017 that it reached its 100 percent goal was significant, representing 2.6 GW of renewable energy development, and it drew attention to persistent regulatory barriers impeding access to renewable projects.

Many other companies in recent years have made similar pledges. Apple made an announcement of its own in April 2018, issuing a press release with the headline "Apple now globally powered by 100 percent renewable energy" and the subheading "Nine more Apple suppliers commit to 100 percent clean energy production."[47] Companies including Walmart, Facebook, Bank of America, Coca-Cola, Citi, Wells Fargo, JP Morgan Chase, and IKEA have all declared goals for 100 percent renewable energy by 2020; eBay, Nike, and Anheuser-Busch/Budweiser, by 2025.[48] As of mid-2018, these were among the 137 multinational companies that have pledges to achieve 100 percent renewable energy as part of RE100, an initiative launched in 2014 in the U.S., now expanded to Europe, India, and China.[49]

Companies want to power their operations with renewable energy for a variety of reasons. In some instances, it may be a reflection of the culture and values of company employees, an image corporate leadership wants to project, shifting economics for renewables, shareholder pressure to address the corporate carbon footprint, or a combination of drivers.[50] During President Obama's second term,

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[47] *Apple Now Globally Powered by 100 Percent Renewable Energy*, APPLE (Apr. 9, 2018), https://www.apple.com/newsroom/2018/04/apple-now-globally-powered-by-100-percent-renewable-energy/ [https://perma.cc/469S-6DS5] [hereinafter *Apple Renewables*].

[48] *See* Rob Price, *Facebook Says It Will Be Powered by 100% Renewable Energy by 2020*, BUS. INSIDER (Aug. 28, 2018) https://www.businessinsider.com/facebook-sets-2020-renewable-energy-and-greenhouse-gas-targets-2018-8?r=UK&IR=T [https://perma.cc/F3KQ-NNBB]; David Ferris, *Budweiser Parent Sets Crazy-Ambitious Renewables Goal,* ENERGYWIRE (Mar. 30, 2017), https://www.eenews.net/stories/1060052308 [https://perma.cc/RZ8G-427E]; *World's Largest Brewer to Buy Wind Farm's Electricity,* GREENWIRE (Sept. 14, 2017), https://www.eenews.net/stories/1060060685 [https://perma.cc/6FK7-RYVB]. *See generally Companies*, RE100, http://re100.org [https://perma.cc/2ASW-WDVL] (listing companies committing to 100 percent renewable).

[49] *See generally* RE100, *supra* note 48. The trend is bigger than just corporate consumers, as many local governments and large institutions like universities are also setting 100 percent renewable energy goals. Their circumstances and obligations present unique issues sufficiently different from companies to make their ambitions outside the scope of this Article, but it is important to note the breadth of trend of large consumers to pursue renewable energy goals. *See generally* Uma Outka, *Cities and the Low-Carbon Grid,* 46 ENVTL. L. 105 (2016) (addressing some of the unique issues facing cities with renewable energy ambitions).

[50] A survey of member companies of the coalition RE100 report on their motivations and rank "management of greenhouse gases" and "corporate social responsibility" as the top motivators, followed third by "economics of renewable energy." *See* THE CLIMATE GRP.,

many of the companies now pursuing renewable energy publicly aligned with the Environmental Protection Agency (EPA) and progressive states to support the Clean Power Plan. The Clean Power Plan is the high-profile Clean Air Act rule EPA finalized in 2015 that set carbon pollution standards for existing power plants for the first time.[51] In a letter to the National Governors Association, for example, companies including Staples, Nestle, L'Oreal USA, Levi Strauss & Co., Mars, General Mills, Gap, adidas, eBay, Eileen Fisher, The North Face, Unilever, Seventh Generation, Timberland, and Stonyfield opened with the statement, "We, the undersigned companies and investors, have a significant presence in your state and strongly support the implementation of the Environmental Protection Agency's Carbon Pollution Standards for existing power plants."[52] They emphasized the need for "long-term policies that provide businesses the certainty needed to transition to a clean energy economy."[53]

When the Clean Power Plan was challenged in court, Amazon, Apple, Google, and Microsoft filed an amicus brief to support EPA, touting their "collective market capitalization of over $1.7 trillion and hundreds of thousands of employees located in every region of the country."[54] The companies argued, "the Clean Power Plan will provide considerable benefits to electricity purchasers and . . . will not only be good for the environment, it will be good for business."[55] An amicus brief filed by Mars, IKEA, Adobe, and Blue Cross and Blue Shield of Massachusetts emphasized how they "use a significant amount of electricity to power their business operations, manufacturing facilities, warehouses, data centers, and other infrastructure in the United States."[56] The brief stressed to the Court of Appeals that a "majority of the

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RE100, APPROACHING A TIPPING POINT: HOW CORPORATE USERS ARE REDEFINING GLOBAL ELECTRICITY MARKETS 18 (2018) https://www.theclimategroup.org/sites/default/files/re100_annual_report.pdf [https://perma.cc/UK8P-2P3S] ("[M]embers . . . are increasingly talking about their RE100 commitments in terms of business opportunity, risk mitigation and investment returns."). Other institutions and scholars also discuss the role of shareholder influence on corporate governance pertaining to environmental and social risks. *See, e.g.*, Copland & O'Keefe, *supra* note 6. *See generally* Virginia Harper Ho, *Risk-Related Activism: The Business Case for Monitoring Nonfinancial Risk*, 41 J. CORP. L. 647 (2016) (urging greater attention to environmental, social, and governance risks within corporate structures and regulatory support for risk related activism, which she argues can promote corporate accountability).

[51] Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,661 (Oct. 23, 2015).

[52] *See* Letter from CERES to Nat'l Governors Ass'n (July 31, 2015), https://www.ceres.org/sites/default/files/Letters/BICEP/CPP%20Governor%20Letter%20-%20National%20(2).pdf [https://perma.cc/8DXH-LHWQ].

[53] *Id.*

[54] Brief for Amazon.com, Inc. et al. as Amici Curiae Supporting Respondents at 4, West Virginia v. EPA (2016) (No. 15-1363), https://www.edf.org/sites/default/files/content/2016.04.01_major_tech_companies_amicus_brief_for_epa.pdf [https://perma.cc/GLT7-K5VK].

[55] *Id.*

[56] Brief for Mars et al. as Amici Curiae Supporting Respondents at 3–4, West Virginia v. EPA (2016) (No. 15-1363), https://www.edf.org/sites/default/files/content/2016.04.01_

largest U.S. businesses," including their own, "have established public sustainability and energy goals to increase their use of zero-emitting renewable energy and billions of kilowatt hours are still needed to meet these renewable energy goals."[57] They note that a "poor reputation on climate . . . can hurt sales and damage customer relations."[58] In filing these briefs, the companies joined eighteen states, sixty municipalities from twenty-eight states representing a population of 33 million, ten power companies accounting for 10 percent of U.S. electricity-generating capacity, and many business and health associations in support of EPA's rule.[59]

With the Clean Power Plan now stayed in the courts as the new EPA Administrator works to repeal the rule, states, cities, and companies that supported the rule have had to regroup.[60] This shift in federal policy was compounded by the Trump Administration's formal abrogation of the international climate accord known as the Paris Agreement which had entered into force in the U.S. in November 2016.[61] Under the Agreement, the world's nations committed to restrain the global rise in temperatures to two degrees Celsius above preindustrial levels or better, using domestic policy measures to be developed by each nation for its own circumstances.[62] The Clean Power Plan is a regulatory strategy developed by the Obama Administration which was seen as central to the United States' pledged

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adobe_mars_ikea_bcbs_ma_amicus_brief_for_epa.pdf [https://perma.cc/8AAT-4F8P].

[57] *Id.* at 7 (internal citations omitted).

[58] *Id.* at 9.

[59] Aligned with West Virginia in challenging the rule were 28 states, power companies, trade associations representing companies heavily invested in fossil fuels. *See* ENVTL. DEF. FUND, LIST OF SUPPORTERS OF THE CLEAN POWER PLAN IN COURT https://www.edf.org/sites/default/files/content/list_of_supporters_of_the_clean_power_plan_in_court.pdf [https://perma.cc/HF66-TD5X].

[60] *See, e.g.*, Order in Pending Case, West Virginia v. EPA, 136 S.Ct. 1000 (2016) (mem.) (No. 15A773), http://www.ago.wv.gov/publicresources/epa/Documents/15A773%20West%20Virginia%20v.%20EPA%20-%20USSC%20stay%20order%20(M0118593xCECC6).pdf [https://perma.cc/S3VW-B8VD].

[61] UNITED NATIONS TREATY COLLECTION, STATUS OF PARIS AGREEMENT, https://treaties.un.org/doc/Publication/MTDSG/Volume%20II/Chapter%20XXVII/XXVII-7-d.en.pdf [https://perma.cc/X27S-RRMG] (including Entry into Force and participant signatures and ratification dates).

[62] The Paris Agreement is an agreement implementing protocol for the 1992 United Nations Framework Convention on Climate Change (UNFCCC), a near-universal treaty with 195 Parties, including the United States. *See Status of Ratification of the Convention*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php [https://perma.cc/D2XV-QEYX] (listing the latest information concerning dates of signature and receipt of instruments of ratification by the Secretary-General of the United Nations). Parties to the UNFCCC agreed to "adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs." United Nations Framework Convention on Climate Change art. 2, May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC].

contribution to climate mitigation under the Paris Agreement.[63] As they did with the Clean Power Plan, many companies supported the Paris Agreement by publicly calling on the U.S. and other nations to chart a "clear, long-term" climate change solution.[64]

This context of federal policy reversal creates an environment in which companies' counterposing renewable energy goals stand out. Many of the companies that supported the Clean Power Plan and the Paris Agreement are now trying to send the message "We Are Still In" with the rest of the world. The "We Are Still In" Coalition represents a noteworthy, mixed coalition that includes states, local governments, investors, and companies that have pledged to operate on renewable energy.[65]

Beyond environmental- and public-image reasons to pursue clean energy, however, is a clear and overarching motivation to save money on electricity and mitigate risks.[66] For some, undoubtedly, this is *the* motivation, with an improved public image a nice secondary benefit. The cost of wind and solar power has dropped significantly in recent years, and long-term renewable energy contracts can stabilize cost predictability into the future.[67] Google explains its 100 percent renewable goal

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[63] *See U.S. Cover Note INDC and Supporting Documents*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf [https://perma.cc/CLF4-L5BM] (identifying carbon pollution standards for existing power plans as among the domestic measures the US intended to implement for emissions reduction).

[64] *See, e.g.*, *Investors Call Upon Governments to Secure a Clear, Long-Term Goal at COP21*, WE MEAN BUS. (Oct. 11, 2015), http://www.wemeanbusinesscoalition.org/blog/investors-call-upon-governments-secure-clear-long-term-goal-cop21 [https://perma.cc/7HPQ-HTK9].

[65] *See US Action on Climate Change Is Irreversible*, WE ARE STILL IN, https://www.wearestillin.com/us-action-climate-change-irreversible [https://perma.cc/X42M-BR9T]. We Are Still In "is an effort coordinated by The American Sustainable Business Council, B Team, Bloomberg Philanthropies, Center for American Progress, Ceres, CDP, Climate Mayors, Climate Nexus, C40, C2ES, Environmental Defense Fund, Environmental Entrepreneurs, Georgetown Climate Center, ICLEI, National League of Cities, Rocky Mountain Institute, Second Nature, Sierra Club, The Climate Group, We Mean Business, and World Wildlife Fund (WWF)." *About*, WE ARE STILL IN, https://www.wearestillin.com/about [https://perma.cc/7WY3-SHBM].

[66] *See, e.g.*, THE CLIMATE GRP., *supra* note 50, at 11; LORI A. BIRD ET AL., NAT'L RENEWABLE ENERGY LABS., RENEWABLE ENERGY PRICE-STABILITY BENEFITS IN UTILITY GREEN POWER PROGRAMS: TECHNICAL REPORT 4–5 (2008). The report explains the benefit of fixed price renewables and notes that purchasing green power for commercial customers "is a business decision" motivated "by an interest in 'doing the right thing,' generating customer, shareholder, or employee goodwill, meeting corporate or organizational goals for sustainable business practices, or for financial reasons, such as mitigating potential penalties for greenhouse gas emissions in the future or providing a hedge against fuel price volatility." *Id.*

[67] *See, e.g.*, *Wind generator's cost declines reflect technology improvements and siting decisions*, U.S. ENERGY INFO. ADMIN (July 12, 2018), https://www.eia.gov/todayinenergy/

by citing both a desire to reduce greenhouse gas emissions as "part of the solution to solving global climate change" and an interest in the insulation from "fuel-price volatility" renewable energy can provide, given that wind and solar fuel inputs are "essentially free."[68] The global manager of renewable energy for GM, which has pledged to operate all its facilities with clean power by 2050, characterized the goal as "primarily all driven off economics," based on "[w]ind and solar costs . . . coming down so fast."[69] As it pursues two new Texas wind-farm deals, GM reports it is already realizing worldwide savings of $5 million per year.[70]

Projects like these present significant economic opportunities for states that are able to ease regulatory pathways and connect companies with renewable energy. This is especially true as companies increasingly favor power sources near their facilities.[71] As the next Part will discuss, state policymakers are beginning to see that access to renewable resources offers a way to attract new companies to their state, driving economic development beyond the renewable energy project itself.

Yet even as access to renewable energy has become increasingly desirable for many companies operating in the U.S., the law in many states stands in the way. Although big-name companies have been able to bargain for renewable energy, large electricity consumers commonly find that, under state law, they have no legal pathway to obtain electricity directly from renewable energy producers, nor mechanisms for buying renewable energy through their utility. As the next Part explains, these barriers result in an unmet demand for clean power, now a growing influence in state energy policy.

II. SHIFTING STATE REGULATORY ENVIRONMENTS

Recent reforms at the state level in response to corporate demand build on an existing regulatory landscape that has been evolving for over more than a decade. Reforms affecting corporate access to renewable energy are primarily an issue for state law due to the Federal Power Act's jurisdictional division of federal and state authority over energy transactions.[72] The Act empowers FERC to regulate wholesale electricity sales and interstate transmission while preserving state authority over retail electricity sales to consumers.[73] Likewise, electricity generated by consumers on their own property—known as distributed generation, most typically in the form of solar panels but also small-scale wind—is primarily regulated at the state level.[74]

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detail.php?id=36615 [https://perma.cc/6C36-9FKS].

[68] GOOGLE, *supra* note 1, at 3–4.

[69] Nichola Groom, *Big Corporations Drive Wind, Solar Growth*, GREENWIRE (June 21, 2017), https://www.eenews.net/greenwire/stories/1060056346/search?keyword=big+corporations+drive+wind%2C+solar+growth [https://perma.cc/95WG-XCRL].

[70] *Id.*

[71] GOOGLE, *supra* note 1, at 6.

[72] 16 U.S.C. § 824 (2015).

[73] *Id.*

[74] *See* Final Rule, Standardization of Generator Interconnection Agreements and Procedures (Order No. 2003), 104 FERC 61,103 (2003) (stating that FERC does not assert

As the last Part made clear, companies buying renewable energy, in and of itself, is not new—indeed, despite the barriers that exist, business renewables have already been an important driver for renewable energy growth in some states. New attention on the barriers is warranted considering the scale of development that would be needed to meet the RE100 goals. To assess recent state-level developments in this area, this Part first provides a basic primer on corporate renewable energy purchasing as it has developed to date. As this discussion will underscore, the distinction between states that adhere to traditional regulation of electric utilities and states that have restructured electric utility regulation has been important to corporate access to renewable energy, although there are other relevant factors. It then turns to leading policy innovations currently shaping reform debates across more traditionally regulated states.

A. Overview of State Policy and Corporate Consumer Access to Renewables

Companies wanting to operate on clean power have three basic options: generate electricity from renewable energy, buy electricity generated from renewable energy, or buy and retire renewable energy certificates (RECs) equivalent to their electricity consumption.

To generate electricity from renewable energy, large companies may be able to build and own a large-scale facility. Apple prefers direct ownership, stating a policy to build its own renewable energy projects "[w]here feasible . . . including solar arrays, wind farms, biogas fuel cells, and low-impact hydro generation systems."[75] Indeed, Apple has gone beyond simply generating electricity for on-site use to establishing a subsidiary for large-scale electricity generation, moving, as Professor Gina Warren has described, from "purchaser to seller."[76] In 2016, an Apple subsidiary, Apple Energy LLC, received approval from FERC to sell wholesale electricity at market-based rates.[77] Google has sought similar approval.[78] This introduction of new actors into the wholesale market presents a range of issues

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federal jurisdiction "when a retail customer installs a generator that will produce electric energy to be consumed on site"); MidAmerican Energy Co., 94 FERC 61,340 (2001) (order denying request for declaratory order) (stating that FERC does not assert jurisdiction over power flows under state net metering programs, which regulate state billing practices for certain retail customers).

[75] APPLE, ENVIRONMENTAL RESPONSIBILITY REPORT (2018), https://www.apple.com/environment/pdf/Apple_Environmental_Responsibility_Report_2018.pdf [https://perma.cc/9N9E-QYWX].

[76] Gina S. Warren, *1-Click Energy: Managing Corporate Demand for Clean Power*, 78 MD. L. REV. 73, 82 (2018).

[77] *Id.* at 83.

[78] *Id.* at 85 (citing Application of Google Energy LLC Market Based Rate Authority and Granting of Waivers and Blanket Authorization, 130 FERC 61,107 (2009)).

beyond this Article, underscoring how a new set of companies—not traditional industry actors—are shifting the landscape across multiple regulatory contexts.[79]

Most typically, however, a company that generates its own electricity will do so with solar panels on building rooftops or smaller ground arrays. Using this option, for example, Walmart reports it has 364 installations and plans to reach 500 by 2020; IKEA boasts 750,000 panels on its store rooftops around the world.[80] How economical this option is for companies, especially smaller firms, varies by state. In many states, net energy metering policies designed to promote distributed generation allow consumers to benefit from dollar-for-dollar reductions on their electricity bill for excess electricity they generate that goes back on the grid.[81] These policies work well for residential and smaller commercial consumers but commonly limit the degree to which large commercial and industrial consumers can benefit by capping how much electricity can be net-metered.[82] This does not prevent larger consumers from installing solar panels, but where caps apply, it limits the incentive to smaller customers. Moreover, some states have begun dismantling net metering programs at the behest of utilities worried the rapid growth of rooftop solar is a threat to revenue.[83] A second limitation of this option for large consumers is that the electricity generated by rooftop systems covers some but often far from all their electricity demand.[84] Thus, a company that saves money and curbs emissions by generating its own renewable energy often must also utilize one of the other

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[79] Warren, *supra* note 76 (engaging with the issues raised by the Apple Energy with a focus on legal reforms possible through FERC, with a focus on the market-power rule).

[80] WALMART, 2018 GLOBAL RESPONSIBILITY REPORT 218 (2018); IKEA, INGKA HOLDING B.V., SUSTAINABILITY SUMMARY REPORT FY17, at 5, 17 (2017).

[81] *See* DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY & U.S. DEP'T OF ENERGY, NET METERING (2017), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2017/11/DSIRE_Net_Metering_November2017.pdf [https://perma.cc/6H6D-GXRJ].

[82] *See* AEEI, OPPORTUNITIES, *supra* note 5, at 11.

[83] Net energy metering policies have recently become controversial in a number of states, creating economic uncertainty for a consumer considering rooftop systems, and undercutting the investment of consumers already generating on-site solar power. For more on the legal and policy context for these controversies, see generally Lincoln L. Davies & Sanya Carley, *Emerging Shadows in National Solar Policy? Nevada's Net Metering Transition in Context*, 30 ELECTRICITY J. 33 (2017) (drawing lessons from other states from Nevada's tumultuous net metering debate) and Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid*, 41 HARV. ENVTL. L. REV. 43 (2017) (situating net metering in broader contexts and proposing an alternative pricing mechanism that incorporates social benefits of solar energy). To track recent state legislative activity related to solar energy, see NC CLEAN ENERGY TECH. CTR., 50 STATES OF SOLAR, Q4 2016 QUARTERLY REPORT AND ANNUAL REVIEW (2017).

[84] For example, IKEA's Kaarst store in Germany, labelled as the company's "leading sustainable store," generates 339 MWh of electricity with onsite solar photovoltaic panels, accounting for eight percent of the store's annual electricity demand. IKEA, *supra* note 80, at 20.

options—either buy the remaining power it needs from renewable sources it does not generate or buy RECs to match whatever use exceeds the output of its systems.

Buying RECs has long been a way for consumers to "offset" the emissions resulting from the electricity they use.[85] In most areas of the country, consumers receive electricity through the grid, which is powered by many power plants generating electricity from coal, natural gas, nuclear power, or renewables. Thus the electricity they use is from this mix of fuels.[86] The concept is that each unit of electricity (i.e., megawatt-hour) generated from renewable energy is represented by a REC.[87] A consumer may purchase renewable energy *bundled with* its associated RECs or *unbundled* RECs, which represent units of electricity verified to have been generated from renewable resources but which may have no geographic or temporal connection to the buyer's actual usage.[88]

Although many companies continue to rely on unbundled RECs to pursue clean energy goals, this option increasingly has lost favor. RECs are losing their appeal mostly due to persistent concerns about their value as a measure of a company's energy profile. The legitimacy of unbundled RECs depends on rigorous verification and tracking methodologies to ensure that electricity represented by a REC is not counted by more than one entity, and companies have questioned the environmental efficacy of matching consumption with REC purchases. Walmart, for example, recently adopted a policy to avoid the purchase of unbundled RECs, explaining in its public renewable energy strategic plan, "we do not have confidence that offsetting instruments alone are sufficient to drive new renewable projects, as opposed to simply shifting around ownership of existing renewable electrons."[89] Google's current policy is "never to buy 'unbundled' or 'naked' RECs . . . sold on an open market, independently of underlying physical energy."[90] These are no longer considered sufficient by companies concerned about climate change because they do not necessarily drive new renewable energy development. As RECs continue to fall out of favor, more companies are interested in access to electricity from

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[85] *See generally Voluntary Green Procurement*, NAT'L RENEWABLE ENERGY LAB., https://www.nrel.gov/analysis/green-power.html?page=0 [https://perma.cc/3DGT-486T] (tracking "status and trends in the voluntary green power market since its inception in the 1990s").

[86] For a basic introduction to the electric grid, see *Electricity Explained: How Electricity Is Delivered to Consumers*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/energyexplained/index.php?page=electricity_delivery [https://perma.cc/DDN2-2JVF].

[87] *See generally Green Power Partnership: Renewable Energy Certificates (RECs)*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/greenpower/renewable-energy-certificates-recs [https://perma.cc/PK3E-8L7Z].

[88] *Id.*

[89] WALMART, WALMART'S APPROACH TO RENEWABLE ENERGY, https://cdn.corporate.walmart.com/eb/80/4c32210b44ccbae634ddedd18a27/walmarts-approach-to-renewable-energy.pdf [https://perma.cc/6BX2-KS2A]; *see also* AEEI, OPPORTUNITIES, *supra* note 5, at 7 (recognizing that unbundled RECs "do not generate savings or confer long-term price- or fuel-hedging benefits" nor do they "necessarily support new or 'additional' project development").

[90] GOOGLE, *supra* note 1, at 6.

renewable energy projects, ideally local or regional to company facilities. This gives a company more confidence that it is expanding renewable energy production, that it will draw electricity from the area of the grid receiving the renewable output, and that it can be recognized for using local or regional renewable resources to power its operations.

Most companies pursuing this goal have focused renewable energy activities in states that have restructured utility regulation to allow for retail competition—that is, electricity consumers have a choice among electricity providers. Restructuring of wholesale markets occurred as a result of FERC Orders during the late 1990s and early 2000s, but state-level restructuring allowing for retail choice occurred across several states as well.[91] This trend halted after the California energy crisis of 2001, which occurred during the state's transition toward increased competition.[92] States that had not already restructured retained their traditional regulatory regimes, under which utilities remain, for the most part, vertically integrated—controlling generation, transmission, and distribution of electricity with an exclusive right to provide service within a geographical area approved by the state utility

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[91] *See, e.g.*, Order No. 888 Final Rule, Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities, 75 FERC 61,080 (1996) (mandating open access transmission and encouraging formation of regional transmission organizations that today operate regional wholesale markets); Order No. 697 Final Rule, Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services By Public Utilities, 119 FERC 61,295 (2007) (encouraging competition in wholesale electric power markets); Order 890-A Order on Rehearing and Clarification, Preventing Undue Discrimination and Preference in Transmission Service, 121 FERC 61,297 (2007) (strengthening mandate for open and transparent transmission planning for public utilities); Order 1000 Final Rule, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 136 FERC 61,051 (2011) (mandating regional coordination of transmission planning and establishing cost allocation principles for shared transmission infrastructure). For more on restructuring of wholesale markets, see generally RICHARD F. HIRSH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM (1999) (providing historical context for the restructuring reforms of the 1990s). For information on state-level restructuring, see LINCOLN L. DAVIES ET AL., ENERGY LAW AND POLICY 426–35 (2015) (explaining retail choice and its policy implications).

[92] *See generally* Jacqueline Lang Weaver, *Can Energy Markets Be Trusted? The Effect of the Rise and Fall of Enron on Energy Markets*, 4 HOUS. BUS. & TAX L.J. 1 (2004) (discussing what the Enron debacle can teach about energy markets); Jim Rossi, *The Electric Deregulation Fiasco: Looking to Regulatory Federalism to Promote a Balance Between Markets and the Provision of Public Goods*, 100 MICH. L. REV. 1768–70 (2002) (drawing lessons from three historical texts on deregulation to explain how "the legal resolution of jurisdictional boundaries plays a significant role in the development of sound deregulatory policies"); Timothy P. Duane, *Regulation's Rationale: Learning from the California Energy Crisis*, 19 YALE J. ON REG. 471 (2002) (discussing what should be learned about energy market restructuring from the Enron scandal and other aspects of California's energy crisis in 2000–01).

commission.[93] If a consumer is in Utility A's territory, it can only buy retail electric power from Utility A, whether it is a residential, commercial or industrial customer. Thus, if Utility A is heavily invested in coal- and natural-gas-fired power plants, consumers are essentially captive to that utility's portfolio in traditionally regulated states. For this reason, it has been easier for companies wanting to buy renewable energy to do so in a restructured state where they can elect to buy from a range of firms, some proffering electricity generated from renewable resources. Indeed, according to the Retail Industry Leaders Association (RILA), "availability of retail choice is a critical factor for a state's attractiveness to corporate and other large institutional buyers of [renewable energy]."[94] Moreover, restructured states are often perceived to have better electricity rates. A recent study of electricity prices found that states with retail competition are "associated with lower . . . electricity prices" for each customer class with the magnitude of the impact being greater for the large customer classes.[95]

The legal mechanism for large-scale transactions is the power purchase agreement (PPA) which, in its simplest form, is a long-term contract between a renewable energy developer and corporate buyer for the generation and physical delivery of electricity from the developer to the buyer.[96] Because physical PPAs are not available to companies in most traditionally regulated states, those companies have looked for ways around regulatory barriers to access alternative energy sources

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[93] *See* AEEI, OPPORTUNITIES, *supra* note 5, at 8 (depicting states that are restructured, states with traditional regulation of vertically integrated utilities, and those of the second group which have come up with a form of direct access for large consumers).

[94] RETAIL INDUS. LEADERS ASS'N ET AL., CORPORATE CLEAN ENERGY PROCUREMENT INDEX: STATE LEADERSHIP AND RANKINGS 25 (2017), http://www.informz.net/rila-fonteva/data/images/RILAITICEIndex.pdf [https://perma.cc/8VZS-CH53]; *see also* AEEI, OPPORTUNITIES, *supra* note 5, at 7 ("The main barrier to accessing large offsite purchases is the electricity market structure in the state where a company or facility is located, and in particular whether utilities are vertically integrated or restructured.").

[95] Agustin J. Ros, *An Econometric Assessment of Electricity Demand in the United States Using Panel Data and the Impact of Retail Competition on Prices*, 38 ENERGY J. 73, 73 (2015). *But see* NOAH DORMADY ET AL., WHO PAYS FOR RETAIL ELECTRIC DEREGULATION?: EVIDENCE OF CROSS-SUBSIDIZATION FROM COMPLETE BILL DATA 33 (2018) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3174939 [https://perma.cc/VB4X-UN3F] (concluding that savings at the retail level from restructuring "have generally been more than offset by cross-subsidies to utility-affiliated [generation companies]").

[96] For detailed explanations of PPAs commonly employed by corporate consumers, see AM. COUNCIL ON RENEWABLE ENERGY, RENEWABLE ENERGY PPA GUIDEBOOK FOR CORPORATE AND INDUSTRIAL PURCHASERS (2016), https://acore.org/wp-content/uploads/2017/12/Renewable-Energy-PPA-Guidebook-for-Corporate-and-Industrial-Customers.pdf [https://perma.cc/LK8L-948G]. Note that PPAs are not limited to use for renewable energy deals. *See, e.g.*, Elec. Power Supply Ass'n v. FirstEnergy Solutions Corp., 155 FERC 61,101 (April 27, 2016) (order granting complaint and rescinding a waiver of affiliate restrictions as to FirstEnergy's PPA for electricity generated from coal, natural gas, and nuclear plants).

not offered through their utilities.[97] Companies' frustration with these barriers is perhaps best illustrated by recent events in Nevada. Casino resorts in Nevada, a traditionally regulated state, drew headlines when they applied to the state utility commission for permission to withdraw as a retail customer from their utility, Nevada Power, in order to purchase directly from renewable energy suppliers at wholesale.[98] Not every state allows this,[99] and in Nevada, due to its regulatory structure, even approved departing consumers must pay an exit fee—and in this case, a multi-million-dollar fee.[100]

Some companies have successfully bypassed regulatory barriers in traditionally regulated states, without leaving utility service, through elaborate legal arrangements that are essentially "virtual," or financial, PPAs. With this arrangement, a corporate buyer pays for the electric power a renewable energy project generates and the developer sells that electricity into the wholesale power market rather than delivering it to the buyer. The buyer and developer share the risk of the deal. RILA explains in simplified terms how, with a virtual PPA, the contract will contain provisions by which the "developer pays the buyer if it can sell the power into the market at a higher rate than the contract price, but if the market price falls below that, the buyer must make up the difference."[101]

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[97] AM. COUNCIL ON RENEWABLE ENERGY, *supra* note 96, at 11 ("Thus, Physical PPAs from utility-scale, off-site generation Projects will only be available in states that allow for competitive retail energy sales to C&I customers as opposed to either (a) regulated markets where only utilities can supply physical electricity to end-users or (b) competitive wholesale markets that nonetheless do not allow for competitive retail sales to C&I customers by Project owners.").

[98] *See, e.g.*, Julian Spector, *How MGM Prepared Itself to Leave Nevada's Biggest Utility*, GREENTECHMEDIA (Sept. 16, 2016), https://www.greentechmedia.com/articles/read/How-MGM-Prepared-Itself-to-Leave-Nevadas-Biggest-Utility#gs.wAmAXJo [https://perma.cc/7ZV6-3CXS].

[99] *See* Sean Whaley, *MGM Resorts to Leave Nevada Power, Pay $86.9M Exit Fee*, LAS VEGAS REV.-J. (May 19, 2016), https://www.reviewjournal.com/business/energy/mgm-resorts-to-leave-nevada-power-pay-86-9m-exit-fee/ [https://perma.cc/LHD5-86MC] (explaining that the "hotel-casino relied on a 2001 law approved by the Nevada Legislature allowing companies to leave as utility customers to lessen pressures on electricity rates during an energy crisis").

[100] Sean Whaley, *MGM, Wynn Resorts Meet Requirements to Leave Nevada Power*, LAS VEGAS REV.-J. (June 22, 2016), https://www.reviewjournal.com/business/energy/mgm-wynn-resorts-meet-requirements-to-leave-nevada-power/ [https://perma.cc/XC2V-PV6G] (explaining that MGM Resorts would have to pay $86.9 million and Wynn Resorts $15.7 million). Note that these companies were seeking both natural gas and renewable electricity on the wholesale market, not exclusively renewable. *See* Daniel Rothberg, *MGM Resorts, Wynn to Stop Purchasing NV Energy Power Saturday*, LAS VEGAS SUN (Sept. 30, 2016), https://lasvegassun.com/news/2016/sep/30/mgm-resorts-wynn-stop-purchasing-nv-energy-power/ [https://perma.cc/DT69-E3P9].

[101] RETAIL INDUS. LEADERS ASS'N ET AL., *supra* note 94, at 25. The "synthetic" PPA refers to the same basic financial arrangement but refers to situations where "the renewable generation plant and the purchaser's facilities are located in different ISOs." *Id.* For an in-

Large companies have used various versions of the virtual PPA concept in traditionally regulated states served by a regional transmission authority.[102] These authorities, known as Regional Transmission Organizations (RTOs) or Independent Service Operators (ISOs), run the wholesale electric power markets, operate electricity transmission, and engage in transmission planning in regions covering about 60 percent of the United States.[103] For example, Google describes the "fixed-floating swap" arrangement it has used in traditionally regulated states within an RTO or ISO footprint.[104] With this carefully structured deal, Google has been able to buy renewable energy from a developer via a virtual PPA, sell it into the wholesale market where it purchases retail electricity from a utility, then retire the associated RECs.[105] Accomplishing this is possible only for large companies with ample resources. It is an advantage not available to smaller firms, whose interest in renewable energy may be the same, but whose consumption does not approach a utility-scale project's capacity. It is also not possible in the same way in states comprising the remaining 40 percent of the country presently without a regional transmission operator.[106]

In sum, renewable energy purchasing, in one form or another, has been possible for large electricity consumers for some time in restructured states. Combined with more circuitous purchase models developed to overcome regulatory barriers, corporate demand has fueled significant renewable development over the last five years. To date, two primary factors drawing corporate buyers to a state are (1) full or partial restructuring to allow retail choice to commercial and industrial customers, as just noted, and (2) participation of the state in an RTO/ISO.[107] It seems clear now that states lacking one or both features—that is, traditionally regulated states, states without an RTO/ISO, or states that have both those attributes—have a disadvantage in attracting corporate renewable energy investments. In the years 2015 to 2016 alone, over 90 percent of corporate renewable energy deals reportedly occurred in

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depth discussion of the complex legal considerations corporate buyers must consider in evaluating a virtual PPA, see AM. COUNCIL ON RENEWABLE ENERGY, *supra* note 96.

[102] GOOGLE, *supra* note 1.

[103] For a map depicting the RTO/ISO footprint, see *Regional Transmission Organizations (RTO)/Independent System Operators (ISO),* FED. ENERGY REG. COMM'N (Oct. 18, 2018), https://www.ferc.gov/industries/electric/indus-act/rto.asp [https://perma.cc/8T7F-P3QE] [hereinafter *Regional Transmission Organizations*].

[104] GOOGLE, *supra* note 1, at 6–8.

[105] GOOGLE, *supra* note 1; *see also* GOOGLE, GOOGLE'S GREEN PPAS: WHAT, HOW, AND WHY 5 (2013), https://static.googleusercontent.com/media/www.google.com/en//green/pdfs/renewable-energy.pdf [https://perma.cc/T5X5-NZ29].

[106] For a visual depicture of which parts of the country are and are not within an RTO footprint, see *Regional Transmission Organizations*, *supra* note 103.

[107] *See* RETAIL INDUS. LEADERS ASS'N ET AL., *supra* note 94, at 11 ("A state's participation in an [ISO/RTO] . . . is also a key attractiveness favor; regional electricity markets offer companies more options in their quest to procure RE."). For a map showing restructured states with retail choice, see *State Electric Retail Choice Programs Are Popular with Commercial and Industrial Customers*, U.S. ENERGY INFO. ADMIN. (May 14, 2012), https://www.eia.gov/todayinenergy/detail.php?id=6250 [https://perma.cc/9D8X-6ZNA].

restructured markets.[108] The biggest obstacle elsewhere? According to Walmart—a company that has actively participated in numerous state dockets related to corporate access to renewables—it is "public policy."[109]

Nonetheless, traditionally regulated states and the utilities operating there, within and outside of regional markets, have attempted to respond to corporate demand for renewable energy through reform.

B. State Reforms to Meet Corporate Demand

To date, some states have reaped greater benefits from corporate renewable energy deals than others. This prompts the question—what is missing in status quo legal regimes that makes them inadequate to corporate demand for renewables? Attempting to provide an answer, large consumers and clean energy advocates are now driving legal innovation designed to better meet corporate demand for clean power, including in traditionally regulated states—with variable results. This Section explains embedded barriers to renewable energy access in relation to states' regulatory amenability to policy innovation in this sphere.

Consider the following contrast between Iowa and Kansas—both are traditionally regulated states with a regional transmission authority, Iowa in the Midwest Independent Service Operator (MISO), Kansas in the Southwest Power Pool (SPP).[110] According to a recent index ranking by RILA comparing state policy environments for corporate clean energy procurement, Iowa ranked first, while nearby Kansas ranked twenty points lower, coming in at twenty-first.[111] Why the difference? Iowa and Kansas are similar in their basic regulatory structure; both are very windy, Kansas ranks second and Iowa, fifth for wind resource;[112] and at the end of 2018, they were ranked first (Kansas) and second (Iowa) for percentage of electricity generated from wind.[113] The difference in ranking, then, seemed to stem

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[108] AEEI, OPPORTUNITIES, *supra* note 5, at 9.

[109] WALMART, *supra* note 80.

[110] *See* FERC, ENERGY PRIMER, *supra* note 10.

[111] RETAIL INDUS. LEADERS ASS'N ET AL., *supra* note 94, at 8.

[112] Jason Samenow, *Blowing hard: The Windiest Time of Year and Other Fun Facts on Wind*, WASH. POST (Mar. 31, 2016), https://www.washingtonpost.com/news/capital-weather-gang/wp/2014/03/26/what-are-the-windiest-states-and-cities-what-is-d-c-s-windiest-month/?utm_term=.6c31e2ca18c9 [https://perma.cc/7KZE-J9NP]; *see also Wind Energy Maps and Data*, WINDEXCHANGE, https://windexchange.energy.gov/maps-data?category=potential [https://perma.cc/VD76-U6T5].

[113] *See Kansas State Profile and Energy Estimates*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/state/?sid=KS [https://perma.cc/T5XC-Q4ZR] (last updated Mar. 21, 2019); *State Fact Sheets – 2018 Wind Generation*, AM. WIND ENERGY ASS'N https://www.awea.org/resources/fact-sheets/state-facts-sheets [https://perma.cc/EXR5-QGBA] (last updated Jan. 2019). Note that in terms of total wind capacity (versus percentage of in-state generation), Texas is by far the state leader at 22,799 MW, with the next closest state, Oklahoma, having only 7,495 MW. *See Wind Facts at a Glance,* AM. WIND ENERGY ASS'N, https://www.awea.org/windenergyfacts.aspx [https://perma.cc/UFW6-UQYT]. The

from the policy environment that each state and the utilities operating there provided for corporate buyers. Minnesota, similarly, has strong renewable potential and is located within MISO, but it ranked even lower (thirty-first) in the RILA index, despite numerous state-level efforts to cut carbon in its electricity sector.[114] These ranges underscore that traditionally regulated states with a robust renewable resource—at least those in an RTO/ISO—are able to accommodate unmet corporate demand if they put effective policies in place.

Although utilities and lawmakers in Kansas initially may not have seen the opportunity as clearly as those in Iowa, growing corporate demand presents a different angle on clean energy, both economically and politically. In September 2017, the state Department of Commerce and the Kansas-based Clean Energy Business Council cosponsored an energy conference focusing significantly on understanding corporate demand and the opportunities it presents for wind-rich states.[115] Two months later, Westar, the vertically integrated utility serving much of Kansas, submitted to the Kansas Corporation Commission a new green tariff proposal—titled a Direct Renewable Participation Service Tariff—designed to serve companies that want direct access to clean power.[116] With this change, Kansas would undoubtedly rank higher on the RILA index. Utilities across several other states have recently adopted or are considering similar measures, including Colorado, Georgia, Kentucky, Minnesota, Missouri, Nevada, New Mexico, North Carolina, Utah, Virginia, Washington, and Wisconsin, all of which are traditionally regulated states without retail choice, and some of which are not within an RTO/ISO footprint.[117]

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top five states in terms of capacity are: (#1) Texas, (#2) Oklahoma, (#3) Iowa, (#4) California, and (#5) Kansas. *Id.*

[114] *See* RETAIL INDUS. LEADERS ASS'N ET AL., *supra* note 94, at 8.

[115] The Clean Energy Business Council is a program of the Climate + Energy Project, a Kansas-based nonprofit for which I serve as a member of the board of directors. CLIMATE + ENERGY PROJECT, www.climateandenergy.org [https://perma.cc/28ZY-X793].

[116] Westar Energy, Inc., and Kansas Gas and Electric Company Application for Approval of their Direct Renewable Participation Service Tariff, State Corpo. Comm'n of Kan., (Docket No. 18-WSEE-190-TAR) (Nov. 6, 2017) (final order approving DRPS tariff) [hereinafter Westar Energy Approval]. The tariff was approved in revised form in connection with a specific wind farm project, which is now fully subscribed, with future projects developed under the tariff to receive separate approval from the KCC. *See id.*

[117] *See* PRIYA BARUA & CELINA BONUGLI, WORLD RESOURCES INST., EMERGING GREEN TARIFFS IN US REGULATED ELECTRICITY MARKETS 4 (2018), http://www.wri.org/publication/emerging-green-tariffs-us-regulated-electricity-markets [https://perma.cc/AHG6-ZF4M] (tracking new green tariff development across the states) [hereafter WRI, EMERGING GREEN TARIFFS]. Virginia had retail choice for a time but competition officially ended in 2009, but the state utility commission has allowed retail customers to continue to buy 100% renewable energy from licensed providers if their assigned utility does not offer such a program. *See Energy Regulation in Virginia: Competitive Service Providers and Aggregators*, VIRGINIA STATE CORP. COMM'N, (July 2018), https://scc.virginia.gov/power/compsup.aspx [https://perma.cc/3P3X-PYYP]. Wisconsin is in MISO, and Missouri is partly within SPP, partly within MISO, and partly outside either authority. New Mexico, Nevada, North Carolina, and Wyoming are all mostly

For many companies, what is missing under status quo legal regimes is captured in the Corporate Renewable Energy Buyers' Principles developed by the Renewable Energy Business Alliance, providing criteria for policy changes that will help companies meet their goals.[118] This is a good starting place, because of the number of corporate entities that have signed on to the Buyers' Principles, but also because policymakers and utilities are beginning to pay attention.[119] For example, Westar's green tariff proposal to the Kansas Corporation Commission cites the Buyers' Principles, including it as an attachment with the submission.[120]

The Buyers' Principles are useful for what they convey about how law and policy might evolve in traditionally regulated states. These six Principles center on companies' desire for (1) choice in their source of electricity, (2) access to cost-competitive renewable resources, (3) access to longer term, fixed price arrangements, (4) additionality—"[a]ccess to new projects that reduce emissions beyond business as usual," (5) simplified approval processes and third-party financing for renewable energy projects, and (6) innovative collaborations with utilities and regulators.[121]

Companies dissatisfied with what their utilities provide want expanded choice for consumers, like the retail choice already existing in a minority of states.[122] Short of undertaking state regulatory restructuring, which incumbent utilities typically oppose, retail competition may not be possible in traditionally regulated states, which leaves these states, their utilities, and utility commissions to create options that approximate the benefits choice provides through other means consistent with their regulatory structure.

The second Buyers' Principle is cost competitiveness, between traditional and renewable energy rates.[123] There have been "green" pricing programs in place for some time designed to give companies 100 percent renewable energy, but they have been generally based on unbundled RECs and have entailed a fixed premium price on top of existing rates.[124] Today, corporate customers want rates that actually reflect

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without an RTO, though small portions of eastern New Mexico and northwestern Wyoming are in SPP, a small portion of southwest Nevada is in the California ISO (CAISO), and a small portion of northeast North Carolina is in PJM, which includes nearly all of Virginia. Colorado, Georgia, Utah, and Washington have no RTO/ISO. *See* FERC, ENERGY PRIMER, *supra* note 10.

[118] *The Principles*, CORP. RENEWABLE ENERGY BUYERS' ALLIANCE, https://buyersprinciples.org/principles/ [https://perma.cc/JV3N-LMW4] [hereinafter REBA].

[119] According to REBA, "[a]s of June 2018, 75 companies have signed on, representing over 69 million MWh of annual demand by 2020." *See About Us*, CORP. RENEWABLE ENERGY BUYERS ALLIANCE, https://buyersprinciples.org/about-us/ [https://perma.cc/8CB8-ANRY].

[120] Westar Energy Approval, *supra* note 116.

[121] REBA, *supra* note 118.

[122] *Id.*

[123] *Id.*

[124] *See* PRIYA BARUA, WORLD RES. INST. (WRI), IMPLEMENTATION GUIDE FOR UTILITIES: DESIGNING RENEWABLE ENERGY PRODUCTS TO MEET LARGE ENERGY

the falling cost of renewables and do not want to pay a higher price that has no clear connection to what the utility pays for the power. Westar had this kind of program in place for commercial and industrial consumers for many years—and it had zero participants.[125]

The third Buyers' Principle—access to long-term, fixed-price arrangements—represents companies' recognition that, when renewable energy costs are low, these contracts can stabilize their energy expenditures at a favorable level. As customers of vertically integrated utilities, the benefits of low-cost renewables have not measurably reduced the rates they pay. The ability to sign long-term, fixed-price contracts directly is significant for companies hoping to hedge against volatile electricity prices, and they see direct access to renewable developers as key to this protection.

In this context, additionality, the fourth Buyers' Principle, means, in simplest terms, bringing new renewable energy projects to the grid.[126] Companies signed on to the Buyers' Principles share a common aspiration: "We would like our efforts to result in new renewable power generation."[127] They want to use their high consumption to drive renewable energy development, hence the shift away from reliance on unbundled RECs linked to existing facilities. For carbon reduction, this is critical—the environmental value of legal reform in this area, and the potential for

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CUSTOMER NEEDS 3 (2017), http://www.wri.org/publication/implementation-guide-green-tariffs [https://perma.cc/994W-YARH] [hereinafter WRI, IMPLEMENTATION] (elaborating on the difference between new green tariffs and earlier green power programs); *see also* CTR. FOR THE NEW ENERGY ECON., UTILITY GREEN POWER OPTION (2016); *Green Pricing Programs*, CTR. FOR CLIMATE AND ENERGY SOLUTIONS, http://www.c2es.org/document/green-pricing-programs/ [https://perma.cc/CD6V-JEQN].

[125] Westar Energy Approval, *supra* note 116, at ¶ 4 (discussing Wind Generation Service, designed for commercial and industrial customers seeking wind energy, but which has no subscribers "because the WGS price is significantly higher than the current market price of wind generation").

[126] The concept of additionality is presented very simply here, consistent with the way the term is being used in general discussion of the evolving corporate demand for clean power. Additionality has a deeper significance, however, and much more complexity in the context of international climate change treaty negotiations, in which the concept plays a central role in determining under what circumstances an emissions reduction is validly attributed to a given action. For a recent attempt to clarify the appropriate use of this terminology, see LETHA TAWNEY ET AL., DESCRIBING PURCHASER IMPACT IN THE U.S. VOLUNTARY RENEWABLE ENERGY MARKETS 2 (2018). For more on additionality as the concept is employed in the climate policy context, see generally U.S. GOV'T ACCOUNTABILITY OFFICE, CLIMATE CHANGE ISSUES: OPTIONS FOR ADDRESSING CHALLENGES TO CARBON OFFSET QUALITY (2011) (addressing issues with additionality in the context of emissions cap and trade systems); Charlotte Streck, *Ensuring New Finance and Real Emission Reduction: A Critical Review of the Additionality Concept*, 2011 CARBON & CLIMATE L. REV. 158 (2011) (summarizing arguments framing additionality debates related to emissions reduction and finance under the United Nations Framework Convention on Climate Change and the Kyoto Protocol).

[127] REBA, *supra* note 118.

broader public benefits resulting from this trend, depends on new renewable energy coming onto the grid. Companies are increasingly expressing interest in energy facilities near their operations to localize their impact so that it is trusted, visible, and benefits the local community while enhancing the regional grid.[128]

The fifth Buyers' Principle—access to third-party financing—is especially important to companies seeking to add renewable energy systems on-site. In states that allow third-party financing for rooftop solar, for example, adding a system can become feasible by eliminating the large up-front cost that may be hard to justify, especially for smaller firms. In many traditionally regulated states, third-party financing is not permitted, or the law is unclear, leaving demand for distributed generation unmet.[129]

Finally, the Principle of innovation and collaboration with utilities reflects companies' recognition that in traditionally regulated states, utility cooperation is essential to advancing their goals. Unsurprisingly, for these states, the primary arena for reform has been the state public utility commission (PUC), where utilities seek approval for tariffs and other programs affecting the cost and sale of retail electricity.

Utilities, PUCs, and legislatures in some traditionally regulated states have begun responding to large customers' dissatisfaction with stale green pricing programs and unbundled RECs. The Advanced Energy Economy Institute groups policy reforms into two broad categories: first, those that facilitate access to renewable energy off-site and second, those that support greater access to on-site development.[130] The following account of recent state-level reform efforts, although not exhaustive, highlights emerging policy models and conveys the degree of variability that continues to characterize corporate access to renewables across the states.

1. Access to Renewable Energy Off-site

Utilities in traditionally regulated states are in a delicate position in the face of corporate demand for renewables. On the one hand, they have an economic interest in their existing fleet of electric power plants, which in many states still mostly run on coal and natural gas, with some also relying on nuclear power.[131] This helps explain some utilities' resistance to making commitments to new renewable energy projects and the premium rate structure that dominated early green pricing programs. At the same time, utilities are also keenly interested in new large customers and continuing to provide electricity to their largest customers, with the Nevada casinos'

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[128] *Id.*

[129] For resources on third-party solar financing, see *Third Party Solar Financing*, SOLAR ENERGY INDUSTRY ASS'N, https://www.seia.org/initiatives/third-party-solar-financing [https://perma.cc/6XFU-2Q7Z] (providing links to a range of other sources).

[130] *See* AEEI, OPPORTUNITIES, *supra* note 5.

[131] Thirty states have a nuclear power plant, with nuclear power accounting for 19 percent of electricity nationwide. *See Nuclear Explained: Nuclear Powerplant,* U.S. ENERGY INFO. ADMIN. (Aug. 8, 2018), https://www.eia.gov/energyexplained/index.php?page=nuclear_power_plants [https://perma.cc/W23P-D7HS].

defection—a loss of 4.86 percent of Nevada Power's energy sales—looming as a possibility that could repeat elsewhere.[132] At the same time, they share states' interest in attracting new large customers to their territory, if they can do so profitably.

In the face of current trends in corporate renewable energy ambitions, several state PUCs have evaluated and approved new green tariffs (rate models) that align more closely with the Buyers' Principles. As with every state-level legal instrument, there is variability one to the next, but emerging models are typically in the form of a tariff or rider submitted by a utility for administrative approval to the state PUC. Such a tariff will apply to identified classes of consumers in lieu of or in addition to other applicable rates and, at its most basic, allow a large consumer to purchase renewable energy together with its bundled RECs. The World Resources Institute's research in this area traces the first of the new green tariffs to 2013, with at least fifteen additional states (and counting) enacting or considering utility proposals in the same vein.[133]

A common instrument design used in the new green tariffs is a "sleeved" PPA, converting what would otherwise be a contract between a corporate buyer and renewable energy developer into a three-party transaction, with the utility acting as intermediary to effectuate the deal with PUC approval.[134] This results in an individualized tariff, replacing the standard rates applicable to the corporate consumer with the low-cost renewable energy it negotiated.

A second, newer variation allows a utility to aggregate commercial or industrial customers to make a large-scale renewable energy project feasible, developed by the utility or through a utility-developer PPA.[135] This model is better for consumers with lower electricity needs in the utility's territory—not every company consumes at a scale that would warrant a sleeved PPA. Under this subscriber model, Puget Sound Energy in Washington entered a renewable energy PPA, with approval from the state PUC, to cover multiple corporate buyers' usage, passing on the benefit of the low-cost PPA to the buyers.[136] This provides some of the key benefits outlined in the Buyers' Principles through an arrangement tailored to a traditional regulatory

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[132] *See* Whaley, *supra* note 100. Although the casinos still pay for utility grid services provided by the utility, the utility lost them as electricity customers. *See* Rothberg, *supra* note 100.

[133] WRI, EMERGING GREEN TARIFFS, *supra* note 117, at 2. The WRI report, which is periodically updated, contains detailed fact sheets for each of the states included, complete with links to relevant state PUC dockets. *See id.* at 5–39.

[134] For more on this and other green tariff models, see generally AEEI, OPPORTUNITIES, *supra* note 5, at 9; and WRI, IMPLEMENTATION, *supra* note 124.

[135] For general discussion of this model, see Herman K. Trabish, *Green Designs: Corporate Demand Pushes New Generation of Utility Green Tariffs,* UTILITY DIVE (May 4, 2017), https://www.utilitydive.com/news/green-designs-corporate-demand-pushes-new-generation-of-utility-green-tari/441580/ [https://perma.cc/F66L-LFP6].

[136] *See* PUGET SOUND ENERGY, SCHEDULE NO. 139: VOLUNTARY LONG TERM RENEWABLE ENERGY PURCHASE RIDER, WN U-60 (2016).

environment. This tariff is reportedly the first among new green tariffs to offer this model and extend it to retailers as well as smaller local governments.[137]

A third emerging model that depends on access to an RTO/ISO-administrated wholesale electricity market passes along the wholesale market price for electricity to the customer. World Resources Institute explains these market-based rate programs in simple terms: after a company signs a PPA for renewable energy bundled with its RECs, its vertically integrated utility sells the energy into the market on the customer's behalf and credits the customer with the wholesale market price for the energy received.[138]

These policy developments suggest that the scale of corporate demand is leading companies to look beyond restructured states to push for deals and tariff structures that approximate access to renewables in states operating with traditional regulatory regimes.

2. Access to On-site Renewable Energy

Corporate demand for large-scale off-site renewable energy is the primary driver behind recent policy developments in this area, but it is important to recognize the need for reform to facilitate greater on-site renewable generation for large energy users as well. According to RILA, over 65 percent of companies planning to procure renewable energy intend to pursue on-site solar.[139] This represents significant potential expansion of distributed solar power, and yet regulatory barriers persist that will hinder this growth in many states without change.

Most states have policies in place that support on-site energy generation (commonly referred to as distributed generation, or DG), but as research by the Advanced Energy Economy Institute shows, many do not meet the needs of large consumers and limit their participation.[140] For example, in states with restrictive capacity limits for DG systems, commercial and industrial customers are limited in

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[137] Letha Tawney, *Washington State Pioneers New Model for Utility-Scale Renewable Energy*, WORLD RESOURCES INST. (April 18, 2017), http://www.wri.org/blog/2017/04/washington-state-pioneers-new-model-utility-scale-renewable-energy [https://perma.cc/X5AG-KM9E].

[138] *See* WRI, EMERGING GREEN TARIFFS, *supra* note 117, at 5 (citing Dominion Energy in PJM and Omaha Public Power District in SPP as examples of utilities that have experimented with this model). An additional model is a direct access tariff. AEEI, OPPORTUNITIES, *supra* note 5, at 2. The Advanced Energy Economy Institute explains that this model allows "certain customers in traditionally regulated states, most frequently large energy users, to choose to purchase power from an energy supplier rather than the local distribution utility." *Id.* This model does not have to facilitate RE but can be used to do so. *Id.*

[139] RETAIL INDUSTRY LEADERS ASS'N ET AL., *supra* note 94, at 28.

[140] AEEI, OPPORTUNITIES, *supra* note 5, at 10–12.

how much of their demand they can meet on-site.[141] Thus, a recommended policy reform is to raise system size limits to allow large electricity consumers to maximize on-site generation and thereby reduce how much power has to be delivered via the grid.[142]

Regulatory restrictions on third-party ownership of DG systems is another barrier to realizing the full potential of on-site energy. Nearly half of states allow third-party ownership, including Iowa, Illinois, Colorado, New Mexico, and Texas; all the Northeastern states; and most of the Pacific coast, giving companies a streamlined option to add renewable energy to their facilities—the third-party installs the system on the buyer's property, but continues to own and maintain the system while selling the electricity to the company via a PPA. This is easier for many corporate consumers, just as it would be for a residential customer—it eliminates significant up-front costs because the third party has ready financing, technical capabilities for installation and maintenance, and experience seeking local permits and related approvals.[143] It should be noted that some solar companies offering third-party financing have come under fire for deceptive practices, stripping the RECs from installed systems in the fine print of the contracts with unwitting solar customers so they can resell to other buyers.[144] To legally count on-site generation toward a renewable energy target, of course, a company would have to purchase electricity from the system with its RECs. In states where third-party ownership is disallowed—including Kansas, Oklahoma, Utah, Arizona, and most of the northern Great Plains, Northwest, and South—installing a DG system may be less attractive due to local permitting complexities and more significant up-front costs.[145]

A third area in which reforms can facilitate corporate access to on-site renewable energy relates to how electricity is metered between the utility and the consumer. The concept of aggregated or virtual net energy metering helps companies make the most of an on-site renewable system by allowing them to use electricity generated from a single system across multiple-metered buildings.[146] In

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[141] *Id.*

[142] *Id.*

[143] *Id.*

[144] *See* Kevin B. Jones et al., *Do You Know Who Owns Your Solar Energy? The Growing Practice of Separating Renewable Attributes from Renewable Energy Development and Its Impact on Meeting Our Climate Goals*, 28 FORDHAM ENVTL. L. REV. 197, 207–10 (2017) (discussing the problems and deceptive practice of unbundling RECs from rooftop solar sales).

[145] *See* DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY & U.S. DEP'T OF ENERGY, 3RD PARTY SOLAR PV POWER PURCHASE AGREEMENT (PPA) 1 (2018), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2018/03/DSIRE_3rd-Party-PPA_March_2018.pdf [https://perma.cc/DR7J-BZFN] (depicting states where third-party ownership/third party-PPAs are allowed, disallowed, or uncertain for distributed generation). For more on the legal issues related to third-party solar PPAs generally, as well as with a focus on one state context, see generally Andrew J. Haile, *Solar Financing in North Carolina: The Untapped Potential of Power Purchase Agreements,* 95 N.C. L. REV. 1599 (2017).

[146] AEEI, OPPORTUNITIES, *supra* note 5, at 12.

the same way, this reform helps owners of multi-unit residential buildings install a system that can cut costs across separately metered apartments.[147] In the many states that have net energy metering policies in place, raising caps on usage to include commercial and industrial customers and authorizing virtual metering will expand access to on-site renewables.

As the foregoing underscores, policy reforms in place or under consideration across the states have the potential, if well-designed and -implemented, to drive on- and off-site renewable energy development. There is also the potential for poorly designed programs to be ineffective, lead to continued use of unbundled RECS, and perform something of a greenwashing function for companies focused on image.[148] In ways that have been underappreciated, these innovations raise a range of broader policy questions relevant to the role of corporate demand for clean power in the electricity sector's low-carbon transition.

III. VALUE AND RISKS FOR THE LOW-CARBON TRANSITION

As big-name brands, as employers, as economic drivers, as political actors – multinational companies have the ability to get attention for the issues that matter to them. Their growing demand for renewable energy is important for the low-carbon transition because their consumption is so high – successfully shifting their usage away from fossil fuels could play a key role in accelerating the electric power industry's reorientation toward zero-carbon renewable resources. The trend has taken on even more importance given the turn away from low-carbon priorities at the federal level.

This demand does not exist in a vacuum, however – policy reforms designed to accommodate it emerge from within the electricity sector's complex and pre-existing physical and legal infrastructure. As new green tariffs and other models for access emerge, state policymakers should take a more active role in assessing the value as well as potential risks of this trend. This section first clarifies what "100 percent renewable" claims really mean – a threshold issue for understanding policy

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[147] *See* CTR. FOR SUSTAINABLE ENERGY ET AL., VIRTUAL NET METERING POLICY BACKGROUND AND TARIFF SUMMARY REPORT 31–33 (2015), https://irecusa.org/publications/virtual-net-metering-policy-background-and-tariff-summary-report/ [https://perma.cc/CT6H-6MLC].

[148] Many of the same companies being celebrated for renewable energy accomplishments simultaneously contribute to a wide-range of harmful environmental and social impacts, from primary material sourcing and waste disposal to labor practices. *See* Stephanie Clifford, *Wal-Mart Is Fined $82 Million over Mishandling of Hazardous Wastes,* N.Y. TIMES (May 28, 2013), https://www.nytimes.com/2013/05/29/business/wal-mart-is-fined-82-million-over-mishandling-of-hazardous-wastes.html [https://perma.cc/M8ZL-GMDP]; *see also* Todd C. Frankel, *The Cobalt Pipeline: Tracing the Path from Deadly Hand-Dug Mines in Congo to Consumers' Phones and Laptops*, WASH. POST (Sept. 30, 2016). In 2017, Apple stated a goal to develop "more efficient recycling technologies and other innovations" so that "one day [the company] can stop mining the earth altogether." APPLE, *supra* note 75, at 20.

reform possibilities as well as accurate communication with the public. It then considers some of the issues these reforms raise from the perspective of advancing the low-carbon transition – in particular, implications for emissions reduction, energy decision-making, transmission planning, policy messaging, and equity concerns.

A. Understanding "100 Percent Renewable" Claims

Headlines touting "100 percent renewable"[149] in the US paint a somewhat misleading picture for those unfamiliar with how the electric grid functions. Electricity generated from the blowing wind or from burning coal is the same when it is added to the grid. Thus, any grid-connected company, factory, or residence draws power from a mix of sources.

Recall the Advanced Energy Economy Institute estimate that 450 GW of renewable energy could be developed by meeting half the nation's commercial and industrial electricity demand with renewable electric power – that represents a potentially dramatic change in the US energy portfolio and significant emission reduction.[150] It is important to understand, however, that even if the 450 GW is developed at the behest of a group of companies whose electricity consumption exactly matches 450 GW, those companies are not *using* "100 percent renewable" energy if they are grid-connected to electricity generated from all sources.

More importantly – and this is often lost in discussions of corporate demand for clean power – these companies still depend on the availability of fossil and nuclear energy resources to ensure constant service for their high electricity needs. Thus, it is not just a matter of locational fiat – they are claiming 100 percent renewable energy but in reality they still require uninterrupted service which, for now, is still guaranteed with natural gas, coal, and nuclear power plants. The "100 percent renewable" claims tend to obscure this fact, which is important to understand to avoid inflated perceptions of corporate accomplishments or, worse, a false sense of progress in the low-carbon transition. Recognizing this does not diminish the value of companies' efforts to drive new renewable energy development, but it is essential to keep discourse around this trend grounded with accuracy and a clear understanding of what still needs to be done to decarbonize multinationals and, ultimately, the electric grid.

To their credit, many large companies clarify what is missing from the headlines in public documents about their renewable energy activities. For example, Google provides a forthright explanation of the limits of its 100 percent renewable announcement: "The reality of today's electricity grid means that we are unable to power our operations directly from wind and solar farms during every hour of the day."[151] So when Apple states the following in its most recent Environmental Responsibility Report – "In 2018, we reached a major milestone: 100 percent of the

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[149] *See, e.g.*, *Apple Renewables*, *supra* note 47; Price, *supra* note 48.
[150] AEEI, OPPORTUNITIES, *supra* note 5, at 4.
[151] GOOGLE, *supra* note 1, at 4.

electricity we use at all of our facilities comes from renewable resources"[152] – that is factually inaccurate. The company may have matched its electricity consumption with a combination of on- and offsite renewable energy facilities and RECs, and thereby helped increase renewable energy on the electric grid overall, but it still uses and needs mixed-source electricity at its facilities around the world through interconnection with the grid.

Over time, reliance on the grid will mean something different, as energy storage technologies and advanced energy efficiency and demand response measures expand their impact on grid function. FERC Order 841 in early 2018 created a structure for energy storage resources to participate in US wholesale capacity, energy, and ancillary services markets.[153] Order 841 has been called a "grid game-changer" that creates certainty for investors and will accelerate renewable energy development by counteracting renewables' intermittency.[154] Global growth for utility-scale energy storage is expected to double six times by 2030, driven by the demand for higher renewable energy portfolios and national commitments to cut energy emissions under the Paris Accord.[155]

In the interim, it is important to qualify what "100 percent renewable" means on the grid we have today – for policy makers and for the public – even if it may mean something different in the coming decades.[156]

B. Emissions Reduction and Additionality

Companies' emerging preference for new renewable energy development (additionality) over unbundled RECs is critical to the trend's significance in the low-carbon shift. Buying RECs does not minimize electricity price volatility, offers far less financial support for renewable energy projects, and does not represent any actual change in operations or genuine emissions offset when the RECs are being sold as property rights stripped from an existing facility.[157] This is one of the clear

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[152] APPLE, *supra* note 75, at 7.

[153] Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, 162 FERC ¶ 61,127 (Feb. 15, 2018) (final rule).

[154] *See* Keith Goldberg, *FERC Energy Storage Rule Is a Grid Game-Changer,* LAW360 (Feb. 16, 2018, 9:24 PM), https://www.law360.com/articles/1013613/ferc-energy-storage-rule-is-a-grid-game-changer [https://perma.cc/4LKP-MV2A].

[155] *See* Jeff St. John, *Global Energy Storage to Double 6 Times by 2030, Matching Solar's Spectacular Rise*, GREENTECHMEDIA (Nov. 21, 2017), https://www.greentechmedia.com/articles/read/global-energy-storage-double-six-times-by-2030-matching-solar-spectacular#gs.=zl8yVc [https://perma.cc/2N9W-289X] (citing Bloomberg New Energy Finance).

[156] As this Article was going to press, the Environmental Law Institute released a helpful and accessible guide to 100 percent renewable claims of particular companies that is recommended for further reading. *See Corporate Statements About the Use of Renewable Energy: What Does "100% Renewable" Goal Really Mean?*, ENVTL. L. INST (Feb. 2019), https://www.eli.org/news/corporate-statements-about-use-renewable-energy-what-does-100-renewable-goal-really-mean [https://perma.cc/F99M-KU2R].

[157] *See* RETAIL INDUS. LEADERS ASS'N ET AL., *supra* note 94, at 17.

benefits of onsite renewable systems – they always meet this standard so long as the RECs are bundled with the onsite energy they generate.[158]

For the new green tariffs designed for offsite renewables, additionality should be a central design consideration, and a key feature that differentiates the new models from the older green pricing programs. This element may not always be a convenient requirement from the utilities' perspective – they may already have enough generating capacity and be reluctant to pursue more. To date, the new tariffs have mostly been developed by utilities and submitted to utility commissions for approval, so the pressure to design instruments with additionality comes primarily from the companies – and, more indirectly, from policymakers encouraging utilities to work with companies. This rather passive policy environment underscores the importance of asking a question that seems mostly to be going unasked: What policies *should* the reforms in this sphere serve?

If a new green tariff is seen purely as a state economic development strategy, designed to attract new business to the state, additionality is only really necessary if and to the extent companies demand it. This perspective would make it more likely, for instance, for a tariff to be presented on a case-by-case basis, rather than as a program open generally to corporate consumers.[159] If, by contrast, a green tariff is seen as an opportunity to leverage companies' electricity consumption to cut state emissions, this distinct policy objective would guide instrument design toward broader access for large consumers. This perspective would value additionality for its own sake, rather than through the lens of what makes the tariff appealing to a particular set of corporate actors.

In light of nuanced policy considerations, parties to tariff dockets (companies, consumer, environmental, and clean energy advocates) must analyze the effect of new green tariffs and the likelihood they will be effective, knowing utilities are occupying a conflicted space.[160] Utilities are in the position to largely define what

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[158] *See id.* at 28.

[159] *See, e.g.*, Letter from S. Bryan Kleinmaier, Stafford Rosenbaum, LLP, to Sandra J. Paske, Secretary of Commission, Public Service Commission of Wisconsin (June 21, 2017), http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=305439 [https://perma.cc/FCL7-MTC9] (noting that MGE emphasized that the renewable energy rider tariff "does not specify that the energy purchased will be additional renewable energy").

[160] Companies, consumer advocates, and clean energy supporters regularly participate in utility commission proceedings related to renewable energy tariffs. For example, participants in the docket for Missouri's new green tariff, approved in June 2018, included utility Ameren Missouri, Missouri Division of Energy, Missouri Industrial Energy Consumers, Natural Resources Defense Council, Office of the Public Council, Renew Missouri, Sierra Club, Union Electric Company, Wal-Mart Stores East, Wind on the Wires. *See* Application of Union Elec. Co. d/b/a Ameren Missouri for Approval of 2017 Green Tariff, No. ET-2018-0063 (Nov. 27, 2017), https://www.efis.psc.mo.gov/mpsc/Filing_Submission/DocketSheet/docket_sheet.asp?caseno=ET-2018-0063&pagename=case_filing_submission_FList.asp [https://perma.cc/ST87-UDJK]. Participants in Oregon's ongoing green tariff docket include utilities Pacific General Electric Co. and Pacific Power, Alliance of Western Energy Consumers, Avangrid Renewables, Northwest & Intermountain Power Producers Coalition, NW Energy Coalition, Oregon Citizens Utility Board, Renewable NW,

works for them in traditional regulatory regimes – most typically, they submit proposals to the utility commission, for approval or disapproval, and although they may not always get exactly what they ask for, they have set the parameters for the dialogue. It bears noting, too, that not all companies are equally concerned with additionality, though the Buyers' Principles make it a key criterion for new policy to meet signatories' needs.[161] This makes objective analysis of emerging reforms essential to ensure they achieve additionality and advance the low-carbon shift.

Finally, it must be emphasized that, despite unbundled RECs beginning to fall out of favor, they are still the dominant sourcing strategy for companies pledging 100 percent renewable targets. According to RE100, with its growing membership, arguably representing the most ambitious companies, the reliance on unbundled RECs *is* falling, but it is still significant in the US – in 2015, it accounted for 85 percent of all claimed renewable energy for surveyed companies, then dropping to 59 percent in 2016 as PPAs and new green tariffs came into more common use.[162]

As effective alternatives are developed at the state level, connecting consumers with *additional* renewable energy projects across more states, it can be expected that unbundled RECs will continue to diminish in their role. For most companies today, however, "100 percent renewable" claims remain heavily dependent on unbundled RECs, which do much less to change electricity generation from the status quo.

C. Energy Decision-Making

Corporate demand for clean power presents a number of challenges to traditional energy institutions and structures for decision-making. State energy policy derives from a number of sources – legislative action, public utility commissions, the governor's office, utilities, departments of commerce or economic development may play a role, and some states have dedicated offices for energy policy.[163] Anything driving major energy decisions, including via private contract, has policy implications, and this is certainly true in regard to the scale of new renewable projects driven by corporate demand – 12 GW between 2013 and mid 2018, according to the Rocky Mountain Institute Business Renewables Center, which helps facilitate and tracks corporate offsite renewable energy deals.[164] Although large electricity consumers have been uniquely positioned within utility

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and Walmart. *See* Portland Gen. Elec. Co., Investigation into Proposed Green Tariff., No. 18-260 (July 3, 2018), https://apps.puc.state.or.us/edockets/Docket.asp?DocketID=21421&Child=servlist [https://perma.cc/PQT9-VQT2].

[161] REBA, *supra* note 118.

[162] RE100, *supra* note 50, at 30. Apple, by contrast, reports that "66 percent of the renewable energy [it] procures comes from projects that Apple created." APPLE, *supra* note 75, at 9.

[163] *See, e.g.*, Sanva Carley & Tyler R. Browne, *Innovative U.S. Energy Policy: A Review of a State's Policy Experiences*, 00 WIRES ENERGY & ENV'T 1, 1–2 (2012).

[164] *Corporate Renewable Deals 2014 – 2018*, ROCKY MTN. INST. BUS. RENEWABLES CTR., http://businessrenewables.org/corporate-transactions/ [https://perma.cc/4TRP-NNR7] (covering offsite deals only).

regulation, the current trend represents a significant expansion of this role into one that influences power generation portfolios and energy policy from the demand side.

This shifting role aligns with a broader transition in the energy sector toward decentralized energy generation and decision-making, disorienting traditional demarcations between utility and consumer. A number of scholars have recently considered implications of emerging "prosumers" – consumers who act both as passive customers as well as active producers when they have onsite renewable energy systems that feed back into the grid.[165] Companies seeking direct access to renewables may be prosumers to the extent they generate onsite electricity and participate in net-metering, but they are altering the consumer role more significantly still. Rather than being active in one sense and passive in the other, many companies are becoming active in both registers – actively generating their own electricity *and* (1) actively negotiating new consumer relationships with utilities to change how electricity they buy is generated, or (2) working around regulatory barriers without utility cooperation to get what they want.[166] With economic and political heft that residential customers lack, they are able to influence both distributed and centralized, utility-scale power generation.

This influence further disperses energy decision-making, and includes private actors to a greater extent in increasingly significant energy decisions. Because the trend in corporate demand is for clean power, this change is rightly celebrated for aligning market forces with public policy goals to reduce carbon reduction. At the same time, how reforms are crafted to meet this demand, and by whom, are questions that implicate public participation, policy aims, and effective governance. Yet state legislatures have mostly played a passive role in the face of this trend, rather than guiding the development of new green tariffs or engaging how large, privately contracted PPAs for electric power may affect state policy and grid modernization strategies.[167] Although approving new green tariffs and related proposals from

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[165] *See* Sharon B. Jacobs, *The Energy Prosumer,* 43 ECOLOGY L.Q. 519, 521–22 (2017) (defining prosumers as "consumers in the traditional, passive sense who also produce goods or services for sale in the energy marketplace," and detailing the disconnection between the Federal Power Act's structure and modern developments such as distributed generation and more active consumer participation on the grid); *see also* Ahmad Faruqui & Mariko Geronimo Aydin, *Moving Forward with Electricity Tariff Reform,* 2017 REGULATION 42, 42 (noting how retail tariff reform is needed to account for residential customers' entry into a "transactive energy" marketplace) and Amy L. Stein, *Distributed Reliability*, U. COLO. L. REV. 87 (2016) (on customer electricity generation and storage and regulatory approaches to integrate demand side resources for enhance grid reliability). *But see* Shelley Welton, *Grasping for Energy Democracy,* 116 MICH. L. REV. 581, 602–11 (2018) (questioning the fairness and efficacy of consumer-based decision-making in the electricity sector).

[166] *See, e.g.*, REBA, *supra* note 118.

[167] For example, companies pushed for legislation in Missouri 2017 for corporate access to large-scale renewable energy via third-party PPAs, but the bill—"Missouri Energy Freedom Act"—was introduced and made it no further. *See* Missouri Energy Freedom Act, H.B. 439, 99th Leg. Gen. Assemb. (Mo. 2017), https://legiscan.com/MO/text/HB439/id/1445606 [https://perma.cc/4QVC-2MYJ]. Missouri Utility Ameren, however, took the concept to the PUC and received approval for a subscription based green tariff for commercial and

utilities is within the general authority of state PUCs,[168] there has been little legislative guidance for how PUCs should evaluate the purpose or policy objectives of instruments designed to meet private corporate goals.

For states with reforms limited to the PUC context, it represents a missed opportunity in several respects. First, the legislative process engages a broader public than administrative proceedings before utility commissions. Although a PUC docket may provide opportunities for written public comment as well as comment at a public hearing, there is inevitably a much smaller circle of active participants, and such proceedings often receive little media attention. In contrast to legislative engagement with matters of energy policy, which will involve lawmakers from across a state in communication with their constituents, a tariff application pending in a PUC is framed as a narrow pricing request pertaining to a set of electricity customers. Unlike the typical rate case, which in most instances can be appropriately framed in this way, legal mechanisms that will spur large-scale renewable energy development and benefit large corporate customers *set policy* – policy that, ideally, would be thoughtfully integrated with a state's energy planning and generation portfolio, and with a concern for the public interest, broadly conceived. A legislative dialogue could evaluate how and under what conditions it is beneficial to a state and its residents to afford companies access to state renewable resources. This contrasts with the posture of a PUC evaluating a tariff proposal developed by an investor-owned utility, understandably with its own revenue needs and internal capital priorities foremost in mind. PUCs evaluate utility proposals against a standard that is typically localized to what is just and reasonable as between utilities and ratepayers,[169] with a focus on how the new tariff will recover costs for the utility and

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industrial customers with 2.5 MW or more in electricity demand. Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff, No. ET-2018-0063 (Mo. Pub. Serv. Comm'n June 12, 2018) (second non-unanimous stipulation); *see* Jeffrey Tomich, *Midwest Regulators Approve Wind Subscription Program,* ENERGYWIRE (June 28, 2018), https://eenews.net/energywire/stories/1060087209/print [https://perma.cc/A287-75LG]. This observation of low legislative engagement is further supported by research using the Advanced Energy Economic PowerSuite databases of advanced energy bills enacted in state legislatures (excluding bills that were not signed into law) and public utility commission dockets; POWERSUITE, www.powersuite.aee.net [https://perma.cc/MA83-U9EY] (subscription based).

[168] *See, e.g.*, KAN. STAT. ANN. § 66-101 (2018) (giving the Kansas Corporation Commission "full power, authority and jurisdiction to supervise and control the electric public utilities doing business in Kansas," and empowering it "to do all things necessary and convenient for the exercise of such power, authority and jurisdiction").

[169] State utility commissions typically apply a standard in proceedings related to retail rates that mirrors the Federal Power Act's requirement that wholesale rates are just and reasonable and non-discriminatory. 16 U.S.C. §§ 824d(a)–(b) (2017); *see also, e.g.*, KAN. STAT. ANN. § 66-101b (2017) (showing how this standard applies at the state level, the Kansas Corporation Commission to ensure "just and reasonable rates" and declaring any "unjust or unreasonable discriminatory or unduly preferential rule, regulation, classification, rate, charge or exaction" to be "unlawful and void").

from whom.[170] Broader questions that could be considered in a legislative process – effective generation and transmission planning, for example, or equity concerns, both discussed below, as well as additionality conditions and project siting criteria – are more likely to go unaddressed.

There are some exceptions, but the contrast only reinforces these points. In 2014, the Oregon legislature directed the PUC to "conduct a study to consider the impact of allowing electric companies to offer voluntary renewable energy tariffs to their nonresidential customers."[171] In doing so, the legislature outlined factors to guide the PUC's considerations, including: whether such a tariff would promote development of significant renewable energy resources; what impacts, "including any potential cost-shifting," it could have on other customer classes; and whether electricity would be obtained via competitive procurement.[172] The bill required that no costs associated with such a tariff could be borne by other customers, and it barred renewable energy sources developed for the tariff from being double-counted toward the state's renewable portfolio standard, thereby promoting additionality.[173] Other exceptions include Virginia and Utah legislatures, which have recently enacted laws that lend support, if less directly, for renewable energy deals between large electric

[170] *See generally* 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 (2014) (surveying PUCs institutional development and demonstrating how case law has reinforced the economic focus that dominates PUC decision-making to the exclusion of environmental and other policy considerations). *But cf.* Michael Dworkin et al., *The Environmental Duties of Public Utilities Commissions*, 18 PACE ENVTL. L. REV. 325, 326–34 (2001) (countering the "common misconception that public utility commissions are solely economic regulators" by showing examining state statutes defining the contours of PUC authority in all 50 states). There are certainly examples of creative policy making by PUCs beyond strictly economic regulation of the industry. *See, e.g.*, Alan Ramo & Deborah Behles, *Transitioning a Community Away from Fossil-Fuel Generation to a Green Economy: An Approach Using State Utility Commission Authority*, 15 MINN. J.L. SCI. & TECH. 505, 518–22 (2014) (detailing how the California Public Utility Commission redirected funds from unused federal acid rain program allowances from closed Mohave generating station to help Navajo and Hopi tribes affected by the closure to develop renewable energy).

[171] H.B. 4126 § 3(2), 77th Leg. Reg. Sess. (Or. 2014).

[172] *Id.* § 3(3).

[173] *Id.* § 3(4).

consumers and utilities.[174] More states, however, are developing tariffs through utility commission proceedings with little direct legislative involvement.[175]

Policymakers may become more engaged if they understand how reforms can spur renewable energy growth and economic development in their state. In a recent report anchoring policy approaches more concretely to the potential they have in particular states, the Advanced Energy Economy Institute (AEEI) analyzed commercial and industrial electricity consumption across the states to determine where each policy adoption would yield the best returns.[176] Seeking to engage state policymakers, AEEI uses a policy opportunity index to rank states with the clearest opportunities to increase corporate access to renewable energy through reforms amenable to their existing regulatory structures.[177] For example, the five states with the most to be gained with policy interventions increasing access to large offsite purchases include California, Florida, Indiana, Michigan, and Minnesota, based on the gap between current large customer electricity consumption in each state with its present renewable energy capacity.[178] Legislative action is likely required for some of these reforms to be adopted, but not necessarily all – in either instance, integrated energy policy lead by elected officials, and with space for broader public participation, is preferable to reforms limited to utility-driven administrative proceedings.

At least two key concerns could particularly benefit from broader policy attention through governmental legal structures: accounting for corporate deals in resource and transmission planning, and equity in instrument design. Each is considered below in turn.

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[174] *See* H.B. 2267, 2015 Leg., Reg. Sess. § 67-1501 (Va. 2015) (creating the Virginia Solar Energy Development Authority "established for the purposes of facilitating, coordinating, and supporting the development . . . of the solar energy industry and solar energy projects by developing programs that . . . provide a hub for collaborating between entities, both public and private, to partner on solar energy projects"); *id.* §67-1505(14) (specifically directing it to assist "investor-owned utilities in the planned deployment of at least 400 megawatts of solar energy projects in the Commonwealth by 2020. . . ."); Renewable Energy Amendments, H.B. 297, 2017 Leg. Gen. Sess. (Utah 2017) (defining "renewable energy tariff" to mean "a tariff offered by a qualified utility that allows the qualified utility to procure renewable generation on behalf of and to serve its customers" – the sleeved PPA concept).

[175] *See* AEEI, OPPORTUNITIES, *supra* note 5.

[176] *See id.* at 13 ("The report identifies states with the greatest potential to expand corporate access to advanced energy by assessing the regulatory and policy environment, potential market size for corporate purchases, and renewable energy potential of all 50 states.").

[177] *Id.* at 5 (combining factors including a state's regulatory regime, a state's corporate electricity consumption levels, and available renewable resource in the state).

[178] *Id.* at 9–10. Rankings also provided for policies focused on access to distributed generation. *Id.* at 11–13.

D. Capacity and Transmission – Planning and Limitations

Effective planning for electricity infrastructure – generation facilities and transmission lines – has long been challenging due to jurisdictional limitations and siting and financing issues, among others.[179] Transmission lines needed to bring electric power to population centers – especially long-distance transmission crossing multiple states – often do not keep pace with new generation. Consider recent transmission congestion in the Southwest Power Pool (SPP), for example, where wind has been developed faster than transmission capacity.[180] As wind farms have been built in western Kansas, the need for more transmission has increased.[181]

An ongoing multi-year, multi-state approval process for Clean Line Energy's proposed Grain Belt Express transmission project – approved in Kansas, Illinois, and Indiana, and after years of litigation, in Missouri – epitomizes the regulatory barriers to meeting transmission needs of new generation facilities.[182] The trend in

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[179] The legal literature has addressed many aspects of these challenges. *See, e.g.*, Ashley C. Brown & Jim Rossi, *Siting Transmission Lines in Changed Milieu: Evolving Notions of the Public Interest in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705 (2010) (addressing barriers to an evolving "public interest" state regulatory regimes for transmission line approval and cost allocation); Alexandra B. Klass, *The Electric Grid at a Crossroads: A Regional Approach to Siting Transmission Lines,* 48 U.C. DAVIS L. REV. 1895 (2015) (comparing the centralized regulatory frameworks applicable to natural gas pipelines with the fragmentation of transmission line siting and proposing a shift from state to regional siting for transmission infrastructure).

[180] *See* HIMALI PARMAR & SHANKAR CANDRAMOWLI, ICF, WIND IN SPP IS NOT SO SIMPLE 1 (2017) (discussing pace of wind development in the SPP footprint and need to address risk of generation curtailment and price distortion), https://www.icf.com/resources/white-papers/2017/wind-in-spp-is-not-so-simple [https://perma.cc/R3TN-JVKT]; U.S. DEP'T OF ENERGY, NATIONAL ELECTRIC TRANSMISSION CONGESTION STUDY xviii (2015) (reporting congestion in the SPP and other Midwest regional markets "results from high and growing levels of wind generation that cannot be delivered from the western side to more distant, eastern loads, and the lack of additional transmission to enable further development in renewable-rich areas"), https://www.energy.gov/sites/prod/files/2015/09/f26/2015%20National%20Electric%20Transmission%20Congestion%20Study_0.pdf [https://perma.cc/C5K9-2NUJ]. The terms "transmission constraint" and "congestion differentiated," refer to "[a]n element of the transmission system . . . that limits power flow; An operation limit imposed on an element . . . to protect reliability; or [t]he lack of adequate transmission system capacity to deliver electricity from potential sources of generation . . . without violating reliability rules[,]" and "situations where transmission constraints reduce transmission flows or throughput below levels desired by market participants or government policy," respectively. *Id.* at viii–ix.

[181] *See* Emma Foehringer Merchant, *U.S. Wind Industry Frets as Major Transmission Lines Stall*, GTM (Mar. 9, 2018), https://www.greentechmedia.com/articles/read/an-argument-as-old-as-wind-the-transmission-conundrum#gs.o2FXC0Va [https://perma.cc/5V37-4XG2].

[182] *See* KAN. CORP. COMM'N, UTILITIES AND COMMON CARRIERS ANNUAL REPORT 13 (2018), http://www.kcc.state.ks.us/images/PDFs/legislative-reports/2018_Utilities_and_

corporate demand for clean power contributes to these challenges with a high number of privately contracted PPAs arising outside utilities' traditional planning process and RTO/ISO planning for new transmission lines across their regions. The majority of states require integrated resource planning (IRP) – that is, the process of forecasting energy demand and planning how it will be met with supply and demand side resources[183] – but large-scale corporate demand has not yet been accounted for in this planning.[184] This increases the chance of overbuilding generation capacity or adding capacity that has not been well planned for, resulting in transmission congestion of the sort that has been experienced in the SPP and elsewhere.

New green tariffs could help ameliorate this concern in traditionally regulated states with IRP. To the extent the tariffs are well-designed to meet companies' needs better than private contracting, utilities, PUCs, and regional operators will be able to incorporate new projects into the planning process.[185] Numerous states, however, including states with high renewable resources, still do not require IRP, relying on traditional, supply-focused utility planning.[186] Thus, although decentralized decision-making has some benefits, as growth in distributed generation and corporate demand for clean power demonstrate, it is not a perfect match to existing regulatory structures, which are slow to adapt.

There are good reasons why states should adapt resource planning to reflect corporate demand, however. As the Center for the New Energy Economy (CNEE)

Common_Carriers_Report.pdf [https://perma.cc/KC3K-KG9C]. Although the Grain Belt Express eventually received final approval from the Missouri utility commission in early 2019, landowners and some state legislators continue in efforts to block the project through eminent domain reform. For an informative account of the Grain Belt saga, see Jeffrey Tomich, *Mo. Lawmakers move to block $2.5B transmission line*, ENERGYWIRE (Apr. 18, 2019), https://www.eenews.net/energywire/stories/1060175537 [https://perma.cc/8GEM-SSLP].

[183] RACHEL WILSON & BRUCE BIEWALD, SYNAPSE ENERGY ECON. INC., BEST PRACTICES IN ELECTRIC UTILITY INTEGRATED RESOURCE PLANNING: EXAMPLES OF STATE REGULATIONS AND RECENT UTILITY PLANS 4 (2013), http://www.raponline.org/wp-content/uploads/2016/05/rapsynapse-wilsonbiewald-bestpracticesinirp-2013-jun-21.pdf [https://perma.cc/JCM9-Q9UG].

[184] *See* CTR. FOR THE NEW ENERGY ECON., PRIVATE PROCUREMENT, PUBLIC BENEFIT: INTEGRATING CORPORATE RENEWABLE ENERGY PURCHASES WITH UTILITY RESOURCE PLANNING 6 (2016), http://www.ourenergypolicy.org/private-procurement-public-benefit-integrating-corporate-renewable-energy-purchases-with-utility-resource-planning/ [https://perma.cc/4LA6-JA42] (noting that "no states have yet taken a forward-looking approach to planning around corporate renewable energy targets").

[185] *See* WRI, IMPLEMENTATION, *supra* note 124, at 4 (showing states as of mid-2017 with successful tariffs as well as those that have failed to attract corporate buyers).

[186] WILSON & BIEWALD, *supra* note 183, at 5 fig.2 (depicting states with and without IRP requirements); *see also* AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., INTEGRATED RESOURCE PLANNING (2014), http://aceee.org/sites/default/files/pdf/policy-brief/irp-brief-0714.pdf [https://perma.cc/PT5E-GSUN] (contrasting traditional utility planning with IRP, which includes non-utility stakeholders and expands options for meeting demand to include alternatives to new generation).

recently explained in a white paper, to thoughtfully account for corporate renewables could defer the need for utilities to plan new generation facilities that would be charged to ratepayers.[187] It would also avoid "dampening demand" with higher than necessary fees on corporate procurement to protect impacts on other customers.[188] Integrated planning can align state policy with private sector trends, and benefit from the economic development possibilities they represent.[189] To date, however, it does not appear that any state has developed an effective approach to planning for corporate renewable demand.[190] Here, CNEE concludes, state legislatures or state agencies (an energy office, if there is one, or a commerce or economic development authority) can "play a crucial role" in directing utilities and PUCs to adapt.[191]

A lack of planning to incorporate private renewable targets in public planning may also implicate companies' "100 Percent Renewable" claims. It extends the concept of additionality, beyond just ensuring that a renewable energy project is new and additional, to ask – can it consistently come online? Is there transmission infrastructure sufficient to accommodate the new renewable capacity? If not, even if a wind farm is built under a corporate PPA with a developer, the electricity it generates may be curtailed due to transmission congestion or excess generation capacity. Curtailment occurs when an RTO (or utility, if outside an RTO footprint) orders a wind or solar generator to reduce the electricity generation at the facility below what it would otherwise be able to produce.[192] The most common reasons for curtailment are transmission congestion, excess generation when demand is low, lack of access to transmission or other technical issues with voltage, frequency, or interconnection.[193] Renewable energy curtailments create financial risk for parties to a PPA,[194] but also may undermine the legitimacy of renewable energy claims. Can a company rightly assert it receives all its electricity from renewables – consistent

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[187] CTR. FOR THE NEW ENERGY ECON., *supra* note 184, at 7.

[188] *Id.*

[189] *Id.* at 7–8.

[190] *See id.* at 6.

[191] *Id.* at 12.

[192] *See* LORI BIRD ET AL., NAT'L RENEWABLE ENERGY LAB., WIND AND SOLAR ENERGY CURTAILMENT: EXPERIENCE AND PRACTICES IN THE UNITED STATES 1 (2014), https://www.nrel.gov/docs/fy14osti/60983.pdf [https://perma.cc/2SLW-XMNG].

[193] *Id.*

[194] *See, e.g.*, Smoky Hills Wind Project II, LLC v. City of Independence, 889 F.3d 461 (8th Cir. 2018) (regarding a breach of contract claim under renewable energy agreement for failure to pay for $330K in curtailment losses); Smoky Hills Wind Farm, LLC v. Midwest Energy, Inc., No. 6:15–CV–1116–JTM–KMH, 2015 WL 3833378 (D. Kan. June 22, 2015) (determining there was no federal jurisdiction over a contract dispute between parties to a renewable energy purchase agreement centered on who would bear the $1.8M loss resulting from involuntary curtailments between 2012–14); *see also* Eric Gimon et al., *Renewables Curtailment: What We Can Learn from Grid Operations in California and the Midwest*, GTM (Mar. 23, 2015), https://www.greentechmedia.com/articles/read/renewables-curtailment-in-california-and-the-midwest-what-can-we-learn-from#gs.ZWOUFXI [https://perma.cc/URA3-4NQS] (addressing efforts in MISO and CAISO to reduce curtailment through operational changes).

with additionality – if a project it counts toward its target is routinely being curtailed? It is not clear how, if at all, the effect of curtailment has figured into corporate buyers' statements about clean energy goals. The potential for emissions reduction benefits from adding clean energy to the grid where it may lead coal plants to operate through self-commitment, as occurs in the SPP.[195] If nothing else, the risk of curtailment is yet another justification for incorporating corporate pledges into state and regional planning.

E. Equity Considerations

In addition to the issues discussed above, green tariffs and related clean power access mechanisms raise a number of equity considerations, as between new and existing corporate buyers, and as between customer classes.

With any of these instrument designs, common questions arise: Will the new green tariff be available only as an enticement to companies with new development in the state, or will it also be available to existing commercial and industrial consumers that want to shift their usage to clean power? Will a tariff be offered to a defined class of customers or be issued case-by-case when a utility can strike a deal on terms it considers favorable with individual corporate buyers? Will it be available to small businesses as well as the large consumers driving the trend? Perhaps most important, will tariff design avoid raising costs for others, especially residential customers?

Case-by-case and negotiated approaches may be used in a way that seems to offer preferential treatment to new corporate entrants to a state, even if the deal struck between a utility and corporate buyer is cost contained.[196] Here again, it becomes clear that such an arrangement implicates the broader policy questions that could frame instrument design in this space. If the tariff is conceived purely as an economic development tool, it may be structured to highlight benefits of low-cost

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[195] As the Energy Information Administration explains, "[i]n the SPP, unlike in other regions, some coal-fired generators are operated similar to natural gas units and are used to balance fluctuations in wind output through the day" when operators "self-commit" even when the "market-clearing price" does not cover marginal costs for the plant. *Like natural gas, coal in the Southwest Power Pool is cycled to accommodate wind power*, U.S. ENERGY INFO. ADMIN. (Sept. 26, 2018), https://www.eia.gov/todayinenergy/detail.php?id=37132 [https://perma.cc/M6F5-HR5U]. The EIA explains further, "Although this decision could lead to a loss in revenue, a plant may choose to self-commit if the cost of restarting the generating unit could exceed the cost of continued operation while taking the lower market-clearing price." *Id.*

[196] Such individual contracts need approval from utility commissions in traditionally regulated states, in order to verify that the terms are not discriminatory or unduly preferential. *See, e.g.*, Application of Madison Gas and Electric Company for Authority to Offer a Renewable Energy Rider 5-6, No. 3270-TE-102 (Pub. Serv. Comm'n of Wis. June 21, 2017) (final decision), http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=327993 (discussing role of utility commission in reviewing individual contracts) [https://perma.cc/NA7P-LNQE].

renewable energy for companies that agree to locate new facilities in the state. For example, tariffs that accomplish a sleeved PPA for one large company may facilitate a deal for a renewable energy project, providing access to renewables for that single corporate buyer.[197] Offering individualized green tariffs on favorable terms may be an effective economic development strategy, from a state perspective, and more insulation from changes in the market, from the utility perspective, but it may neglect demand that exists among companies already operating within the state. By contrast, if supporting renewable energy development is a state's overarching goal, state subscriber programs offer a structure to meet demand from new as well as existing C&I consumers in the state.

These equity considerations should be key elements of green tariff design. There are at least two ways in which green tariffs could increase costs for other customers, if not managed appropriately in the tariff design. The AEEI notes (1) the risk that a subset of customers may bear increased costs for maintaining a utility's existing generation and transmission facilities if corporate consumers are served by a separate green tariff, and (2) the risk that costs associated with new projects under a green tariff will be shared by customers who are not directly benefiting from it.[198]

The possibility that offering low-cost renewables to companies could shift costs to residential consumers is a key concern for ratepayer advocates who participate in PUC dockets evaluating green tariff proposals. They seek assurances that green tariffs for business renewables will not create inequities between electricity customer classes, with a particular interest in protecting residential and small business consumers. For example, a recent proposal by Madison Gas and Electric for a new renewable energy tariff allowing "nearly all commercial and industrial customers to participate" raised cross-subsidization concerns from Wisconsin's utility commission staff and the Citizen Utility Board given that – based on eligibility criteria – "more than 4,000 customers representing 68 percent of MGE's system sales would qualify."[199] At the same time, the Citizen Utility Board urged that the program should make small businesses the priority, presenting an equity concern based on size within commercial and industrial customer classes. To that end, they sought broad eligibility to include smaller commercial consumers, but with a cap (opposed by MGE and clean energy advocates).[200] PUCs tend to be cautious,

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[197] *See* WRI, IMPLEMENTATION, *supra* note 124, at 8.

[198] ADVANCED ENERGY ECON. INST., MAKING CORPORATE RENEWABLE ENERGY PURCHASING WORK FOR ALL UTILITY CUSTOMERS: DESIGN PRINCIPLES FOR VOLUNTARY RENEWABLE ENERGY PROGRAMS 5 (2017), https://info.aee.net/making-corporate-renewable-energy-purchasing-work-for-all-utility-customers [https://perma.cc/JUB4-QMEG] [hereinafter AEEI, CORPORATE RENEWABLE ENERGY PRICING] (detailing eight design features that utility commissions should include to ensure nonparticipants do not bear costs of green tariffs).

[199] Citizens Utility Board, Comments on Commission Staff Memorandum, on the Application of Madison Gas and Electric Company for Authority to Offer a Renewable Energy Rider, (Pub. Serv. Comm'n of Wis. June 21, 2017) http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=305417 [https://perma.cc/4AGN-J6DG].

[200] *Id.* at 7.

requiring usage thresholds for eligibility or participation caps to ensure no cost shifting to residential consumers occurs. In its final decision, the Wisconsin commission approved the program as a framework for evaluating individual customer contracts, requiring corporate consumers under the program to be responsible for all costs associated with their agreement, imposing a limit on participation to 25 MW of existing load, and preserving broad eligibility.[201]

Similarly, when Westar submitted the Direct Renewable Participation Service Tariff to the Kansas Corporation Commission, the Citizens' Utility Ratepayer Board (CURB) intervened on the basis of concern that "rates paid and the services received by residential and small commercial ratepayers may be substantially affected" by the proposal.[202] A staff analysis of this risk convinced the Commission that the new tariff will not affect other customers, and if anything, would likely benefit other customers indirectly.[203] The Commission then approved the tariff for use with an already identified project, but requires Westar to return for new approval for any future facilities it may propose under the program.[204]

In what promises to be a closely watched proceeding, the New Mexico Public Regulation Commission issued an order requiring Facebook to pay half the transmission costs associated with access to a renewable energy facility it is pursuing with the local utility under the state's green tariff, for lack of evidence that the transmission line would benefit retail customers. State economic development officials warned of a "chilling effect" on corporate relations with the state, while a utility commissioner countered, "it strains credulity that [the utility seeking approval of the Facebook deal] would think we would accept its position without evidence."[205]

If a green tariff can provide access to low-cost renewables for large corporate consumers, it begs the question - why should the same not be available to residential customers? Advocates for corporate access to renewables respond to this objection by emphasizing that any new facilities built to meet corporate demand are dependent

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[201] Approved MGE Renewable Energy Rider (Amend. No. 349), No. 3270-TE-102, (Pub. Serv. Comm'n of Wis. July 25, 2017), http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=328585 [https://perma.cc/V3R6-C66N].

[202] Westar Energy, Inc. and Kansas Gas and Electric Company for Approval of their Direct Renewable Participation Service Tariff, No. 18-WSEE-190-TAR (Kan. Corp. Comm'n Nov. 8, 2017) (petition to intervene and motion for protective order and discovery), http://estar.kcc.ks.gov/estar/ViewFile.aspx/S20171108095214.pdf?Id=451a570a-f704-4a32-9660-0709cb4dcdb4 [https://perma.cc/V6YH-YVCP].

[203] *See, e.g*, Application of Westar Energy, Inc. and Kansas Gas and Electric Company for Approval of their Renewable Participation Service Tariff, No. 18-WSEE-190-TAR (Kan. Corp. Comm'n Docket June 7, 2018) (notice of filing of staff's report and recommendation), http://estar.kcc.ks.gov/estar/ViewFile.aspx/S20180607085619.pdf?Id=e54a86d9-08df-4c81-b8d8-9663bdb55c52 [https://perma.cc/L8Y5-UX4P].

[204] Westar Energy Approval, *supra* note 116.

[205] *See* Kevin Robinson-Availa, *PRC Decision Blindsides Facebook, State Officials Warn*, ALBUQUERQUE J. (Apr. 17, 2019), https://www.abqjournal.com/1304265/prc-decision-blindsides-facebook-state-officials-warn.html [https://perma.cc/8U3D-K3XT].

on the scale of that demand and the capital it makes available to developers.[206] In addition, with effective design, AEEI argues a green tariff *should* be able to benefit even non-participant customers – new renewable energy projects that result from green tariffs "deliver a wider-reaching set of benefits, including infrastructure upgrades, increased resource and fuel diversity, potentially lower electricity prices, new tax revenue, and high-paying local construction and operation jobs."[207] In states that have ratepayer boards, these advocates can play an important role in evaluating design so that these benefits can accrue to all customers without increasing their rates.

CONCLUSION

Like so many other aspects of this field, state level reforms for business renewables confront recurring themes of energy law – inconsistent policy objectives, piecemeal and increasingly decentralized policymaking, state variability, and the continuing gap between generation and transmission planning. At the same time, corporate demand and successful efforts to circumvent regulatory barriers corresponds with the emerging trend of active electricity consumers wielding influence in energy policy spheres.

From the perspective of the low-carbon transition, corporate renewable energy deals have been important to continuing the growth trajectory for renewables as federal energy policy refocused on fossil fuels. As this article has explained, how much these companies' clean energy goals will meaningfully advance the transition depends on a range of factors, such as how fully companies move away from unbundled RECs and stimulate new projects, but also how well existing governance structures adapt to incorporate this increased demand, to minimize curtailment and ensure equity among consumer classes.

Understanding "100 percent renewable" claims is especially important to ensure that a false sense of accomplishment does not diminish the urgency for continued low-carbon reforms, at all levels of government, but also within a company's own operations. New renewable energy will help cut carbon from electricity, but the less glamorous cousins, energy efficiency and conservation on the demand side, have the most direct connection to companies' actual electricity use. As Professor Eisen has observed, "demand response is hardly anyone's idea of the most exciting resource in a transformed electric grid."[208] Unlike clean energy, which has captured the imagination of companies for all that it may represent – new and advanced technology, cost savings, hope for the planet, corporate social responsibility people can see – demand response represents a negative of "not energy at all."[209] Nonetheless, FERC's recent rulemaking enhances the potential of demand

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[206] *See, e.g.*, WRI, IMPLEMENTATION, *supra* note 124, at 16.
[207] AEEI, CORPORATE RENEWABLE ENERGY PRICING, *supra* note 198, at 17.
[208] Eisen, *supra* note 30, at 368.
[209] *Id.*

response to support a modern low-carbon grid, and corporate electricity consumption has been particularly amenable to this model.

Likewise, renewable energy may be better for attracting companies to a state, but energy efficiency programs, if well designed, can also help retain companies important to a state economy.[210] In Ohio, for example, American Electric Power's Business Incentive program was able to save auto parts manufacturer Nissin Brake to reduce its energy consumption by over 800,000 kWh.[211] There is significant variability with regard to how well state policy encourages energy efficiency investments by utilities and consumers, particularly in commercial and industrial classes,[212] yet the importance of this area cannot be overstated. Recent analyses suggest aggressive efficiency measures have the potential to cut energy use in half by 2050, compared with current trajectories, thereby reducing the need for new generation facilities, renewable or otherwise. This outcome will depend on improving efficiency broadly, across "existing factories, homes, commercial buildings, electric transmission and distribution systems, and power plants" – a scale of change that will need governmental support and would benefit from the kind of demand companies are directing toward new renewables.[213] There is still significant policy work to be done across many states, especially in the area of ratemaking reform, to enhance access to energy efficiency measures that would cut commercial and industrial consumption. In much the same way that companies are driving renewable energy growth through policy engagement at the state level, those that are serious about emissions reduction should be at least as engaged on efficiency policy reform.

As state energy law and policy continues to adapt to a changing energy sector, the trend of corporate demand for clean power underscores the important role consumers are playing at the state level, moving the US incrementally closer to a modern low-carbon grid. Each state that advances policy in this space – whether expanding access to large scale renewable energy, distributed generation, or energy efficiency – offers a template for other states to evaluate, adapt, and improve upon in ways that meet their own unique circumstances. This Article evaluates the trend and state level responses at an early stage, and there is still a great deal of policy innovation, and negotiation, to be done before the full impact of the trend can be assessed. As state policy continues to develop in response to demand for renewable

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[210] AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., MYTHS AND FACTS ABOUT INDUSTRIAL OPT-OUT PROVISIONS (2016), http://aceee.org/sites/default/files/ieep-myths-facts.pdf [https://perma.cc/HV6U-88N6].

[211] *Id.*

[212] *State Energy Efficiency Scorecard*, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., http://aceee.org/state-policy/scorecard [https://perma.cc/E73D-KVKH].

[213] AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., FACT SHEET: THE ROAD TO CUTTING US ENERGY USE AND EMISSIONS IN HALF WHILE STRENGTHENING THE ECONOMY (2017), http://aceee.org/fact-sheet/road-to-cutting-energy-use [https://perma.cc/9DC3-8DDB].

energy, states that effectively meet consumer needs, ensure equity across customer classes, and situate measures within a coherent modern energy plan can provide the best models for other states.