Solar Energy Industries Association (SEIA)[1]

COMPETITION ISSUES BETWEEN SOLAR DISTRIBUTED GENERATION (DG) FIRMS AND REGULATED UTILITIES

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Background

As early as 1998, the Federal Trade Commission (FTC) issued comments in a proceeding before the California Public Utilities Commission regarding competition between distributed generation and utilities in the retail electricity space. Distributed generation (DG) at that time consisted of multiple technologies, solar photovoltaics among them (PV). One of the chief concerns at that time was the ability of this new platform of technologies to compete with incumbent market participants: regulated electric utilities.

As the FTC wrote at that time:

> In general, advances in DG technology offer substantial potential benefits to consumers, but the rate and extent of DG implementation have yet to be determined and there are some potential costs of DG use as well. DG also faces potential discrimination in connecting to the grid from vertically-integrated, incumbent suppliers in light of DG's potential to increase competition in generation, transmission, and distribution.

Eighteen years later, PV has become the dominant technology operating on the distributed generation platform. What was mostly theoretical in 1998 in terms of DG PV becoming a competing electricity generation platform with traditional centralized generation retail service has become a reality with the maturation of the solar industry, a ninety percent (90%) reduction in the cost of solar panels, a two thousand percent (2000%) increase in the number of solar workers, the spread of solar to dozens of states rather than California alone, innovation in financing and ownership structures for DG technologies, massive scaling in production, and sophisticated marketing and customer acquisition strategies.

Today DG solar and other distributed energy resources (DER) are competing head-on with regulated utilities and in many U.S. locations can provide the same product (electricity) at a lower cost to the consumer using a new, innovative platform.[2] Yet as the FTC foresaw, incumbent utilities are positioned

[1] As a trade association, SEIA is comprised of hundreds of member companies. This paper does not necessarily reflect the views of every member company.

[2] *N.b.* the similarities between recent struggles in other sectors of the economy between incumbent entities operating on an older platform and market entrants offering innovative consumer choices operating on a newer platform (e.g., hotels and AirBnB; taxicabs and Uber). The newer entities shouldn't be forced to operate by the rules and laws created for the older platform. Nor should older entities be allowed to abuse artificial market advantages provided by the American people to meet public policy or market needs of yesterday to unfairly advantage themselves against new competition that did not exist at the time such advantages were created.

to keep DG competitors at a disadvantage or entirely out of the marketplace. In some cases, this is happening, resulting in DG companies substantially disadvantaged and consumers unable to avail themselves of an innovative and competitive technology operating on a new platform.

Utilities are clearly taking both notice and action. A recent strategy blueprint produced by the Edison Electric Institute, trade association for investor-owned utilities, considered DG a "distributive challenge" that was "likely to dramatically impact customers, employees, investors, and the availability of capital to fund future investment."[3] In other words, the evolution of DG threatens the incumbent regulated utility business model through competition.[4] The report went on to state:

> The timing of such transformative changes is unclear, but with the potential for technological innovation (e.g., solar photovoltaic or PV) becoming economically viable due to this confluence of forces, the industry and its stakeholders must proactively assess the impacts and alternatives available to address disruptive challenges in a timely manner.[5]

Any question as to the seriousness with which utilities are considering DG solar can be put to rest by reading their own internal report, which clearly and repeatedly refers to DG solar as a threat to the incumbent utility business model and to the consistent payments to private utility shareholders, who were never the intended beneficiary of utilities' artificial monopoly:

> "Disruptive changes are a new type of threat to the electric utility industry. Disruptive changes lead to declining customer and usage per customer levels that cannot be easily quantified as to the potential threat posed to corporate profitability. This type of problem has not been faced before by the electric industry and, thus, must be understood as to the strategic issues and alternatives that are raised…. The new potential risk to utility investors from disruptive forces is the impact on future earnings growth expectations. Lost revenues within a net metering paradigm, for instance, are able to be recovered in future rate cases. However, without a shift in tariff structures, there is only so much of an increase that can be placed on remaining non-DER customers before political pressure is brought to bear on recovery mechanisms. Once the sustainability of the utility earnings model is questioned, investors will look at the industry through a new lens, and the view from this lens will be adverse to all stakeholders, including investors and customers. While we do not know the degree to which customer participation in

[3] "Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business," Edison Electric Institute & Energy Infrastructure Advocates (2013).

[4] The report, in fact, spends considerable time comparing the situation currently faced by utilities to that of the regulated monopoly phone companies in the 1970s, noting the severe impact of new technologies leading to regulatory action to improve competition: "In the late 1970s, deregulation started to take hold in two industries that share similar characteristics with the electric utility industry—the airline industry and the telecommunications industry (or "the telephone utility business"). Both industries were price- and franchise-regulated, with large barriers to entry due to regulation and the capital-intensive nature of these businesses. Airline industry changes were driven by regulatory actions (a move to competition), and the telecommunications industry experienced technology changes that encouraged regulators to allow competition. Both industries have experienced significant shifts in the landscape of industry players as a result." *Ibid,* p. 2.

[5] *Ibid.*

DER and behavior change will impact utility earnings growth, the potential impact, based upon DER trends, is considerable."[6]

Consumer advocates and other policymakers need to be attentive to the possibility that utilities are proposing a suite of charges and retail rate designs that are intended not to address legitimate questions of cost allocation, but rather to stifle competition from DG and other distributed energy resources.

A. Issues of Competition Between Utilities and DG Solar (When Utilities Do Not Own DG Assets)

Regulated electric utilities have a broad range of actions that may be used to limit the growth of competition, including DG solar, without owning a single DG solar asset. Below are some of the actions taken by regulated utilities that can stifle competition from DG solar. As costs of DG solar have fallen, the percentage of the cost of the DG solar system stemming from hardware (solar panels, inverters, racking, wiring) has decreased substantially, while the percentage of cost from "soft costs" has risen dramatically and "present the most substantial opportunities to spur strong U.S. growth in solar deployment in the coming years."[7]

Despite innovative structures developed to encourage greater use of DG solar, certain regulated utilities continue to try to thwart their use to prevent competition. Sometimes, their efforts are supported by states.[8] Recently, a nonprofit organization and church in North Carolina sought to enter into a power purchase agreement (PPA) for the nonprofit to use DG rooftop solar to supply electricity to the church. The nonprofit petitioned the state public utility commission to "issue a declaratory ruling that it would not be considered a public utility" just by implementing an innovative PPA structure.[9] Duke Energy and Dominion Power both intervened in the case against the nonprofit's position. The commission held that agreement was the sale of electricity to a third-party and that state law gives select utilities the exclusive right to sell electricity to third-parties. In this case, the church was not allowed a competitive choice of DG solar on its own roof, as the commission held Duke Energy had the exclusive right to sell electricity to the church, not the nonprofit.[10]

Utilities have also claimed that their actions to limit competition as outlined below are designed to offset "cost-shifting" caused by DG solar from more affluent ratepayers who can afford solar to those who cannot. These claims are largely neutralized by proper evaluation of the benefits, not just costs, to the electric grid from the installation of DG assets. Many studies show conclusively that such benefits

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[6] *Ibid*, pp. 18-19.

[7] "Soft Costs of Solar Deployment," U.S. Department of Energy (2014).

[8] *See, e.g., SZ Enters., LLC v. Iowa Utils. Bd., 850 N.W.2d 441, 444 (Iowa 2014).* Eagle Point, a solar developer, had entered into a PPA agreement with the city of Dubuque where the company would install and maintain a DG solar system on a government building and sell the all of the system's output to help power the building. Eagle Point petitioned the Iowa Utility Board (IUB) for a declaratory ruling that Eagle Point was not a utility. The IUB rejected the petition, determining that Eagle Point was a public utility and/or electric utility and therefore disallowed from entering into the arrangement with Dubuque. Eagle Point was forced to fight the IUB decision in state court. The case went to the state supreme court, which held that Eagle Point was indeed not a public or electric utility and therefore allowed to enter the agreement. The financial costs and project delays on the small company petitioner were substantial and a clear detriment to competing in the marketplace. *SZ Enters., LLC v. Iowa Utils. Bd., 850 N.W.2d (Iowa 2014).*

[9] 2016 N.C. PUC LEXIS 235, *1 (N.C.U.C. Apr. 15, 2016).

[10] *Ibid,* at *51.

equal or exceed any costs.[11] Therefore, proposed charges, taxes, and other artificial, anticompetitive market dysfunctions imposed by utilities as outlined below should not be allowed to continue based on erroneous "fairness" assertions.[12] It is understood that the provision of energy to the American consumer is not a static structure and so innovation is required. The utility proposals, however, are mired to structures created in the past, and need to be updated or replaced to properly allow for new, competitive options.

Over time, alternative rate designs may be needed to accommodate the technical and economic impacts associated with high penetration of DG solar and other DER technologies. Alternative rate designs, however, should focus on incentivizing customers to use DER technologies in a way that benefits the grid, rather than stifling investment in these technologies. For instance, volumetric rates that encourage customers to consume more electricity when there is a surplus of solar or wind power that otherwise will result in curtailment of these resources; or alternatively to consume less electricity during periods of peak demand, serve a legitimate public purpose by aligning consumer behavior with the needs of the utility grid. By contrast, many of the rate designs recently proposed by utilities represent a radical shift in ratemaking that appear to be intended primarily to make customer investments in DG solar uneconomic. Done well, rate designs can encourage customer investments in technologies that contribute positively to grid efficiency, reliability, and resilience. Done badly, rate design can kill competition by making investments in these technologies uneconomic.

These concerns are exacerbated by the complexity of applying traditional antitrust doctrines in the context of a retail electricity industry long dominated by utilities with regulated monopoly franchises. One of the most important contributions that the FTC can make is to educate and inform both federal and state utility regulators regarding their role in ensuring that retail rates not only satisfy traditional criteria regarding legitimate cost allocation, but also provide the opportunity for competing technologies to flourish appropriately where those technologies offer potentially substantial benefits to consumers and promote other public purposes, including health and environmental benefits.

1. Increased Fixed Charges

Fixed charges have become a staple in utility arguments as a compensation for costs allegedly placed on the grid from the introduction of distributed solar. Recent studies have concluded, however, that "higher fixed charges are an inequitable and economically inefficient means of addressing utility revenue concerns."[13] In addition, fixed charges when targeted at solar consumers alone, are

[11] *See, e.g.,* meta-analysis by Mark Muro, Brookings Institution, "Rooftop Solar: Net Metering is a Net Benefit" *http://www.brookings.edu/research/papers/2016/05/23-rooftop-solar-net-metering-muro-saha.* Available studies show solar has a total value near or higher than retail rates when properly inclusive of T&D cost avoidance and ancillary service benefits, as well as environmental and other social considerations.

[12] Developing consistent methodology for the identification and measurement of such costs and benefits is crucial in order to determine an accurate and agreed upon value of solar, especially as solar applications and the physical and market conditions in which distributed solar is used continue to evolve. There is a strong role for the U.S. Department of Energy, the National Association for Regulatory Utility Commissioners, and others to create such a common methodology.

[13] Whited et al., "Caught in a Fix: The Problem with Fixed Charges for Electricity," Synapse Energy Economics, Inc.: Cambridge, Mass. (February 2016). Prepared for Consumers Union. http://consumersunion.org/wp-content/uploads/2016/02/Caught-in-a-Fix-FINAL-REPORT-20160208-2.pdf

fundamentally anticompetitive by creating a direct financial disincentive for choosing a competing electricity source to utility power.

A recent study for the Consumers Union by Synapse Energy Economics pointed out flaws in the simplistic technique of imposition of fixed charges on consumers to offset claimed utility costs—flaws that negatively impact consumers—including:

- *Reduced Customer Control*. Since customers must pay the fixed charge regardless of how much electricity they consume or generate, the fixed charges reduce the ability of customers to lower their bills by consuming less energy.
- *Low-Usage Customers Hit Hardest.* Customers who use less energy than average will experience the greatest percentage jump in their electric bills when the fixed charge is raised. There are many reasons a customer might have low energy usage: they may be very conscientious to avoid wasting energy; they may simply be located in apartments or dense housing units that require less energy; they may have small families or live alone; or they may have energy-efficient appliances or solar panels.
- *Disproportionate Impacts on Low-Income Customers.* Data from the Energy Information Administration show that in nearly every state, low-income customers consume less electricity than other residential customers, on average. Because fixed charges tend to increase bills for low-usage customers while decreasing them for high-use customers, fixed charges raise bills most for those who can least afford the increase.
- *Reduced Incentives for Energy Efficiency and Distributed Generation.* By reducing the value of a kilowatt-hour saved or self-generated, a higher fixed charge directly reduces the incentive that customers have to invest in energy efficiency or distributed generation. Customers who have already invested in energy efficiency or distributed generation will be harmed by the reduced value of their investments.
- *Increased Electricity System Costs.* Holding all else equal, if the fixed charge is increased, the energy charge (cents per kilowatt-hour) will be reduced, thereby lowering the value of a kilowatt-hour conserved or generated by a customer. With little incentive to save, customers may actually increase their energy consumption and states will have to spend more to achieve the same levels of energy efficiency savings and distributed generation. Where electricity demand rises, utilities will need to invest in new power plants, power lines, and substations, thereby raising electricity costs for all customers.[14]

2. Demand Charges

Demand charges have been common for commercial and industrial customers of regulated utilities for decades. Utility bills for these larger, more sophisticated customers contain, among other charges, a usage charge, which is based on the amount of electricity a customer uses over a set period of time (typically a month), and a demand charge, which measures the peak amount of power used at any given point during that period of time (or highest demand in a small time window, *i.e.*, highest consumption in a 15-minute period). Now, utilities are attempting to impose demand charges on residential customers,

[14] Bulleted items quoted from *Ibid.*

with some specifically targeting demand charges at those customers who have installed DG solar, similar to policies for fixed charges.

Although a handful of regulated electric utilities have offered or currently offer voluntary or optional demand charges for residential DG solar customers,[15] no utility before 2015 had ever imposed mandatory demand charges on residential customers. Utilities have recently begun to argue that demand charges for DG solar customers are necessary to recoup costs placed on the electrical system by those customers.

Yet, consumer understanding of a complex utility construct such as billing by peak electricity load demand over a set time period is expectedly low. Demand charges typically monitored by a commercial or industrial energy manager are misplaced for a residential household that has little time, understanding or experience in managing this obscure but very real charge. If a customer has one short high-usage period, created by such a common consumer choice as running a dishwasher and clothes dryer at the same time, he will be punished with a higher charge for the entire monthly billing period, or longer if the demand charge is "ratcheted" as it is under many utility proposals.

This structure is particularly egregious as consumers are overwhelmingly unaware of the consequences of their actions created by an opaque utility structure and therefore can't realistically avoid or manage demand charges. Because customers lack the ability to respond to a demand charges, they operate as fixed charges, discouraging investment in efficiency and solar alike.

Moreover, to the extent that residential customer can respond to them, demand charges often send exactly the wrong price signal to these customers. A demand charge that is based on the customer's individual peak usage will not have any impact on managing the utility's system peak loads unless the customer's peak is "coincident" with the system peak. But residential customers have enormous variability in load profile, few of which are aligned to system peaks.

Finally, there is good evidence that time-of-use (TOU) rates do a better job of aligning customer behavior to system costs, and thus a better job of collecting utility revenues, than do demand charges.[16] TOU rates are easier for customers to understand, and because peak rate periods and charges are known in advance, they are easier for customers to respond to as informed electricity consumers.

Consequently, many demand charge proposals seem to simply be a commonly endorsed method of utilities discouraging competition by raising the overall costs borne by customers who choose DG solar.

3. Net Metering

Net metering is a billing mechanism that allows electric customers who generate their own electricity from DG solar to receive retail credit for surplus electricity they generate back into the grid. Many states have passed net metering laws while in other states utilities offer net metering programs voluntarily or

[15] These include Alabama Power (AL), Alaska Electric Light & Power, Arizona Public Service (AZ), Black Hills (SD, WY), Dominion Power (NV, NC), Duke Energy (NC, SC), Georgia Power (GA), NV Energy (NV), Westar Energy, and Xcel Energy (CO). *See*: The Brattle Group, "An Evaluation of SRP's Electric Rate Proposal for Residential Customers with Distributed Generation" (2015).

[16] James Sherwood et al., "A Review of Alternative Rate Designs: Industry experience with time-based and demand charge rates for mass-market customers" (Rocky Mountain Institute, May 2016), http://www.rmi.org/alternative_rate_designs.

as a result of regulatory decisions. The differences among the state and utility net metering rules create wide variance in benefit for solar customers in different areas of the country.

Net metering has long been a part of the value proposition for DG solar consumers, as they are able to provide excess electricity generated by their solar systems back into the electricity grid to be used by others whom the regulated utility can charge for that electricity. Recently, solar DG customers have seen net metering rules changed, and in some places, nearly eliminated as was the case in the public utility commission case in Nevada at the end of 2015 and finalized in February 2016.

With arguments in favor of such actions from NV Energy, the regulated utility serving Nevada, the state public utility commission (PUCN) shocked DG consumers in Nevada and beyond by first determining that solar DG customers will be considered a separate customer class; second, that these customers will be assessed charges comprised of increased fixed charges, reduced energy charges and "avoided cost concept" value for exported energy, implemented in 4 steps over 12 years; and third, that the value to be provided by NV Energy for net metered electricity would fall from retail levels to wholesale levels within a few years. The changes as issued to net metering even applied retroactively to existing DG solar customers.

These changes in Nevada effectively eliminate the customer's economic case for going solar. In at least some cases, customers who installed solar in 2015 will end up paying more to their utility than they would have by not going solar. Nevada has thus eliminated the competitiveness of DG solar statewide for both new and existing customers. NV Energy was supportive of these changes to net metering, stating that they were necessary to avoid unfair benefits to DG solar customers, which the utility referred to as "cost shifting":

> [NV Energy] propose[s] that the Commission evaluate and choose one of seven alternatives for eliminating the 'substantial subsidy' (i.e. cost shifting) created by old net metering rules. The cost shifting is the project of a 1997 pilot program that required [NV Energy] to provide service to [net energy metered] customers with a specific rate structure designed to encourage what was then a new technology and nascent industry.[17]

NV Energy implies that DG solar policy changes were justified since solar was a "new technology and nascent industry" in 1997. Yet, even in 2015, DG solar only supplied 0.4 percent (160 MWh[18]) of the electricity sold within Nevada (35,847 MWh total sales[19]). This change to net metering in Nevada drove off the state's leading DG solar providers, leaving Nevadans with fewer choices and less competition through a policy change fiercely advocated for by the regulated utility.

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[17] Docket No. 15-07041, "Application of Nevada Power Company d/b/a NV Energy for approval of a cost of service study and net metering tariffs," Nevada Public Utilities Commission Docket (February 1, 2016).

[18] EIA Electricity Data Browser http://www.eia.gov/electricity/data/browser/#/topic/0?agg=2,0,1&fuel=0002&geo=00000000002&sec=g&linechart=ELEC.GEN.DPV-NV-99.A&columnchart=ELEC.GEN.DPV-NV-99.A&map=ELEC.GEN.DPV-NV-99.A&freq=A&ctype=linechart&ltype=pin&rtype=s&pin=&rse=0&maptype=0

[19] IA Electricity Data Browser http://www.eia.gov/electricity/data/browser/#/topic/5?agg=0,1&geo=00000000002&endsec=vg&freq=A&start=2001&end=2015&ctype=linechart&ltype=pin&rtype=s&pin=&rse=0&maptype=0

Yet, there is no consensus that net metering is a net cost to the utility, with respected institutions defending positions that net metering is a net benefit to the utility and the grid.[20]

4. Solar "Taxes"

Solar taxes, or as utilities prefer to call them, installed capacity fees, or "lost fixed cost recovery" (LFCR) charges, are fixed charges by another name, applied by definition only to rooftop solar customers. They should thus be subject to heightened scrutiny.

In 2013, Arizona Public Service pioneered the trend, asking the Arizona Corporations Commission (ACC) to impose an installed capacity fee on DG solar customers of approximately $75 per DG solar customer. The ACC declined to do so, instead opting for a more reasonable charge of $0.70 per kW (approximately $5 per typical solar customer). The difference between the charge proposed by APS and that ultimately enacted by the ACC had much to do with the black box determination of costs-and-benefits associated with competing DG solar, as calculated by the utility. In 2015, APS returned to the ACC with a request to increase the LFCR to $21/month.

But, as discussed above, even if one were to agree with an APS calculation of its fixed costs, as a leading energy economist (and no fan of rooftop solar) has put it, there is no economic rationale for concluding that fixed cost must or should be recovered in fixed charges.[21] Instead, the solar tax model is explicitly aimed at reducing the economics of going solar, thus protecting the utility against competition from its customers.

5. Standby Charges

Standby charges are levied by utilities on DG consumers connected to the utility grid to compensate utilities for being available when DG solar systems experience outages and must rely on power purchased from the utility grid. As defined, such a charge should make the utility whole for the value it provides as a backup to the DG solar consumer, less any benefit the DG consumer can provide to the utility in similar instances. Yet, the standby charge is increasingly becoming an imposed or negotiated fee charged by the utility for the privilege of owning or hosting a DG solar system, and proposed charges in some instances have no correlation to the reality of offsetting the utility's costs.

Standby charges may make sense in certain instances if and only if the DG solar is imposing a cost on the grid that is then borne by the utility with no offsetting benefit from the DG solar system, and, most importantly, the charge is transparent, reached in a deliberative fashion by multiple experts on grid costs and benefits, and is not being used for anticompetitive reasons.

Standby charges, by increasing the cost of DG solar to the end consumer (or eliminating solar DG competition altogether in a state or utility territory), can systematically prevent higher rates of adoption by consumers of innovative technologies. "This could lead to a perverse outcome in which solar PV is systematically hindered from more rapidly reaching a point at which it would need no ratepayer or taxpayer funds to be cost-effective."[22]

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[20] *See* Moro, *supra.*
[21] Borenstein, *What's So Great About Fixed Charges*, (November 3, 2014), https://energyathaas.wordpress.com/2014/11/03/whats-so-great-about-fixed-charges/
[22] *Ibid.*

North Carolina Clean Energy Technology Center, in a paper funded by the U.S. Department of Energy, frames the issue of the threat to competition caused by standby charges in this manner:

> Standby … rates, which limit customer … savings, present short-term cost recovery benefits for utilities, but are often unduly discriminatory, frequently misrepresent the potential benefits associated with PV, and do not account for all of the drivers of diminished across-the-board utility fixed cost revenue recovery. Nevertheless, recent examples from investor- and publicly-owned utilities and their regulators across the country demonstrate that it is possible to implement "softer" and more equitable ratemaking pathways that provide stable utility cost recovery, which are less likely to result in a missed opportunity to reduce solar PV costs and spur greater, more cost-effective PV development. [23]

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6. Permission to Operate/Interconnection Delays

Utilities literally have the power to deny market access to solar DG. In order to install and operate a solar system on a house connected to the grid, the utility must grant permission to operate (PTO). Many consumers believe that the benefits reaped from installing a rooftop solar system begin when the work of the solar company is completed, but in truth, no electricity is allowed to flow from the PV system to the benefit of the consumer until the utility provides PTO. With little incentive for utilities to move quickly to approve PTO, and even perverse incentives to delay PTO due to DG power competition with utility power, delays in PTO times have increased dramatically recently, even while utility familiarity with DG technology has grown.[25]

A recent report from EQ Research that analyzed data from 34 utilities across 13 states and Washington, D.C., found that "utilities took longer to grant PTO in 2014 than in 2013, with average approval times increasing by 68%."[26] Moreover, "for the 24 utilities operating under state interconnection procedures that prescribe PTO deadlines, the average PTO waiting period reported exceeded the regulated limit for 14 of those utilities."[27]

These delays have impacts beyond just the cost to the end consumer and can have a strong anticompetitive impact on the DG solar industry. More consumers are becoming aware of the PTO approval problems and delays, which can discourage the competitive choice of DG solar, while the lion's share of the approval delays lies in the hands of the very entities competing with DG solar. In addition,

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[23] "Rethinking Standby & Fixed Cost Charges: Regulatory & Rate Design Pathways to Deeper Solar PV Cost Reductions," N.C. Clean Energy Technology Center (August 2014).
[24] *Ibid.*
[25] Chelsea Barnes, "Comparing Utility Interconnection Timelines for Small-Scale Solar PV," EQ Research (July 2015). http://eq-research.com/wp-content/uploads/2015/07/IC-PTO-Timeline-Report-7-2015.pdf
[26] *Ibid.*
[27] *Ibid.*

these delays impact the bottom line of large and startup solar DG companies, "reduce marketplace efficiency, and prevent states from achieving policy goals."[28] Solutions to these delays have been developed by such sophisticated entities as the U.S. Department of Energy and multiple national laboratories for more than ten years, but uptake by many utilities is slow to nonexistent.

B. Issues of Competition Between Utilities and DG Solar (When Utilities Own DG Assets)

Utilities can have great impact on the competitiveness of DG solar simply by influencing the policies or charges associated with DG solar transactions. What about when utilities not only compete directly against DG solar in a territory for electricity sales using their traditional technologies, but do so by owning their own solar assets? The issues become more acute. Utilities have inherent advantages in guaranteed cost recovery, financing, customer acquisition, and more, that can be difficult, at best, to levelize against competitive DG providers.

1. Direct Utility Ownership of Solar Assets

Although infrequent in actuality, the discussion of utility ownership of "behind-the-meter" or retail DG solar systems located on a ratepayer's property has increased given the greater competition provided by solar against traditional generation systems. Southern California Edison, CPS Energy (San Antonio), Duke Power, Arizona Public Service, Tucson Electric Power, and other utilities have made such attempts to own DG solar assets, while affiliates of other regulated utilities have also tried, in the case of Georgia Power, ConEdison, and more.[29] The more the costs of DG solar fall, the more ratepayers become comfortable with and express demand for this new means of electricity production, the more likely that utilities will find interest in ways of owning DG solar assets.[30]

The problem is that regulated electric utilities by having a monopoly on provision of grid electricity at the retail level have been provided with advantages over their monopoly period that new entrants cannot obtain. These include customer lists. Customer acquisition is a substantial cost for solar DG providers, who seek names, addresses and electricity usage rates to help determine the solar value proposition. In fact, according to an upcoming report from the U.S. Department of Energy, customer acquisition is the top non-hardware cost associated with residential solar.[31] Yet, utilities already possess the names, mailing addresses, and electricity usage for customers within a utility's service territory by nature of their monopoly. It is anticompetitive for utilities to be able to use this information when competing with solar companies who have not been provided access to such information by the state.

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[28] *Ibid.*

[29] See e.g. Trabish, "What SolarCity's new portfolio of grid services can do for utilities," Utility Dive, May 16, 2016. ("Examples of utilities moving to DERs are proliferating. Arizona Public Service and Tucson Electric Power are working on regulator-approved rooftop solar installations. Southern Company subsidiary Georgia Power's unregulated arm recently moved into rooftop solar. Con Ed has a similar plan in New York. Duke Energy and REC Solar are investing $225 million in DERs on the utility side of the meter.")

[30] See Farrell's consistent arguments: https://ilsr.org/if-you-cant-beat-em-own-em-utilities-muscle-in-to-rooftop-solar-market/

[31] NREL (*forthcoming*) "PV Technology Cost Benchmark, Q1 2016." NREL, Golden, CO.

Just this year, a strongly embattled senate bill in Ohio would have allowed utilities to provide retail DG and essentially shut down net metering while using advantages inherent only to monopoly utilities.[32] Press coverage of the bill pointed to the anticompetitive nature of allowing utilities to enter the retail DG space in direct competition with solar companies. Under this bill, which is likely to be debated in fall of 2016 in Ohio, utilities providing "behind-the-meter" DG solar would have essentially no oversight by the public utility commission, a critical component for consumer and regulator transparency required as a balancing act in the fundamental proposition of providing a utility with monopoly power in the first place.[33]

Utilities also have the ability to ratebase investments. Although we have not seen instances yet of utilities ratebasing DG solar assets that they own, an argument could be made similar to the ones made by solar companies and DG consumers that DG solar can help to stabilize the grid in certain conditions. Besides, at its heart, DG solar, including its inverter, racking and wiring, is an electricity generation system just like a large natural gas or coal generating station and the grid and all of its controls and components needed to bring electricity to the consumer. These investments are almost always ratebased by utilities. Were utilities to make similar arguments and try to ratebase their owned DG solar, it would be clearly anticompetitive compared to companies who have no ability to ratebase and recover costs in a similar fashion.

It is largely for these reasons that the New York Public Service Commission concluded in February 2015 that "utility ownership of [distributed energy resources] will be the exception rather than the rule."[34] Holding that "unrestricted utility participation in DER markets presents a risk of undermining markets more than a potential for accelerating market growth,"[35] the PSC developed the general rule that "utility ownership of DER will not be allowed unless markets have had an opportunity to provide a service and have failed to do so in a cost-effective manner,"[36] and ordered Commission staff to develop price and transaction guidelines to protect against information asymmetry.

One way to interpret these conclusions is that, before allowing utilities to provide DG solar in a particular territory, there must be:

(1) A fair opportunity for competitive non-utility DG providers to develop a DG solar market in that territory;
(2) Typical economic conditions that do not inhibit market growth;
(3) Sufficient time for development and maturation of such a DG solar market;
(4) *Failure of markets to develop to meet public demand.*

[32] Ohio S.B. 320.
[33] See, *e.g.,* http://midwestenergynews.com/2016/05/23/advocates-language-in-ohio-bill-would-basically-shut-down-solar/
[34] New York Public Service Commission, Order Adopting Regulatory Policy Framework and Implementation Plan, p.66, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b0B599D87-445B-4197-9815-24C27623A6A0%7d.
[35] Id. at p. 67.
[36] Id. at p. 68.

FTC guidelines for states on this topic using a similar four-pronged test with significant opportunities for input from the public in any determination could help states determine when regulated utilities are allowed to own DG solar assets.

Unlike the provision of transmission and distribution services, the supply of electrons is not a natural monopoly, and therefore should rely on competitive markets where appropriate. While competitive affiliates of regulated utilities may desire to own DG solar assets directly, care should be taken to mitigate any unfair advantage and the examination of the strength of firewall between the legal entities. Access to customer information should be uniform among credentialed competitors and access to capital should be through private channels without advantage due to a competitor's affiliation to a regulated utility. If a utility wants to leverage its powerful rate base and associated low cost of capital to expand solar deployment, it could do so as a credit enhancement available to all competitors deemed in compliance with reasonable consumer protection, underwriting, installation, and operations standards.[37]

2. Utility-Operated Community Solar

One of the hottest areas in solar energy today is community solar. While the term "community solar" still means slightly different things to different industry participants, a general definition is it is a structure that provides solar to residential or small commercial consumers through a purchase of panels, electricity or interest in a DG solar system based in a centralized location nearby, instead of a system located on-site.[38] A simple example is a 100-kilowatt DG solar system located at the end of a street, in which each of ten homeowners owns ten-percent of the system and receives the value of 10-percent of the electricity output of that system as a payment or a credit on his electricity bill.

Utilities are already a player in the community solar space, which includes projects that compete with both on-site DG solar and utility-scale solar projects that typically sell power at wholesale to utilities. In some states, utilities alone are allowed to own and operate community solar projects.[39] In others, both utilities and solar companies can do so. According to Deloitte, today "77 utilities administer 111 projects across 26 states, accounting for a combined capacity of about 106 megawatts," with investor-owned utilities accounting for more than half of community solar capacity.[40]

As with directly-owned DG solar described above, regulated utilities are at a competitive advantage due to their historical relationship with the customer, knowledge of usage patterns, and ability to combine charges onto a single bill. These advantages should be mitigated with consistent access to customer

[37] This option is perhaps best where unusual economic conditions or when public policy preferences exist, such as to serve underserved sectors such as low-moderate income, non-profit, or small commercial where owner-tenant complexities hinder customer access to solar opportunities.

[38] Some consider community solar, a still evolving model, to be "DG solar" while others refer to it as "wholesale DG solar" or similar. The clearest distinction between community and rooftop solar is its location, off-site vs. on-site the consumer's real property.

[39] E.g., Michigan, where a church was recently unable to create a community solar program, as all such structures are left in the control of the utility service provider. Similar situations exist in other states, including Wisconsin, with full understanding of utility rules and/or control over community solar still becoming clear.

[40] "Unlocking the value of community solar: Utilities find opportunity in the inevitable growth of distributed energy," Deloitte Center for Energy Solutions, 2016.

information for all reasonably-approved competitors in the field, including any competitive utility affiliate, and through consistent on-bill financing or similar options across competitive players.[41]

Private sector entities are also at a disadvantage in their ability to analyze how a community or other DG solar project can be optimally located within the distribution network in order to delay or mitigate costly equipment upgrades. Private sector entities should have certain insight into the distribution grid, such as hourly congestion and/or available capacity, in order to design systems that improve the efficient operation and resiliency of the grid.

Utilities also often have leases or other access to underutilized space provided by local governments for utility operations on which a community solar project can be sited. None of these advantages are available to a competing solar company that either want to launch its own community solar offering or a more traditional rooftop or on-site solar DG system.

Being able to capitalize on advantages built over decades of state-sanctioned retail electricity monopoly powers, it's no wonder that the utility industry is eager to build out its community solar investments. They provide the dual value of serving consumer needs while driving out competition in the form of DG solar providers who have none of the utilities' accumulated advantages.

Conclusion

Utilities have long played a critical role in providing electricity across the nation to grow our economy and improve general living conditions. For the provision of these essential services, utilities were awarded artificial monopoly powers and the ability to recoup costs for certain expenditures in a unique manner from their customers. The need for utility services continues today, and their role in the nation's future electricity grid is critical.

Yet, the rise of a new platform in DG solar has begun to erode the customer market share in the sale of electrons to American homeowners and businesses who are opting for solar for cost savings, self-reliance and property rights, environmental benefits or a host of other reasons. The threatened incumbent utilities are using anticompetitive behaviors and taking advantage of their market position

[41] See, e.g., Michigan S.B. 437 (S-5), strongly supported by Detroit Edison, Consumers Energy and other Michigan utilities. The bill would provide broad ranging and detailed authorization for the utility and/or affiliates to offer "value added programs and services" which include "alternative energy options," likely to include solar DG. Specifically, the provisions would (1) provide a "Standard of Commission" review: "value added programs and services" can be offered so long as they do not harm the public interest by "unduly" restraining trade or competition and assets of the utility may be utilized to provide services. (pg. 125, sec. 10EE(2)); (2) no formal hearing prior to offering—the utility only has to notify the Commission of its intent to offer value added services and provide a general description, but such services could result in substantial expansion of a utility's product offerings (pg. 125-126, see sec. 10EE(6)(4) coupled with sec. 10EE(6)(a)); (3) authorize a utility to use its name and logo in offerings; (4) allow utilities (but no others) to use on-bill financing (pg. 127, sec 10EE(9)); (5) allow, based on broad and vague language, preferential treatment and information sharing between a utility and affiliates such that a utility could use its same employees and facilities to offer competitive products so long as the costs are proportionally attributed to the product offering for recovery, making possible the ability of direct competitor to private solar companies to potentially access detailed knowledge of customer segments such as load profiles, average bill expenditures, etc.

gained through monopoly powers designed for yesterday's electricity platform, to stifle competition from DG solar companies.

At the same time, utilities are beginning to attempt to "jump platforms" from the initial, regulated electricity provider platform for which they were provided monopoly powers to accomplish a real public benefit, to an entirely new platform that is already intensely competitive within the private sector and growing at a tremendous rate while keeping many of the advantages gained under the old regime. Allowing regulated utilities to compete with solar companies by owning and operating DG solar assets, or to challenge competitive private industry through community solar and similar structures without significant oversight, raises a panoply of red flags across the states.

In order to ensure fair competition for the benefit of both American consumers and the solar companies generating jobs and driving our economy, the FTC should take a hard look at the anticompetitive actions of utilities in DG solar and take immediate and appropriate action to restore a healthy, competitive marketplace.