

Good Day Sunshine: Bad Day for the Third-Party Power Purchase Agreement

By JULIE KANTOR*

Introduction

MOST HAVE GROWN UP in a world of centralized power. Conventional coal-fired, gas, and nuclear power stations are centralized, meaning they often require electricity to be transferred over long distances, carrying with it considerable fixed costs to providers and social costs to consumers. As the world becomes more aware of how industrialization is impacting the planet, many groups have tried to find ways to slow (or even stop) the production of greenhouse gases and other pollutants that are destroying the ecosystem. Of course, most promising of these has been the ability to capture sustainable sources of energy. One of the most accessible of these resources, which is readily available in most areas of energy poverty, is solar energy.¹

Solar energy is harnessed by the use of solar panels that capture the sun's rays and convert it into useable energy.² The type of generation that these solar systems utilize when they are localized at or near where the energy is being consumed (like on your own roof) is referred to as "distributed generation." Distributed generation ("DG") systems are decentralized, modular, and flexible technologies that are located close to the load they serve. These systems typically use renew-

* J.D. Candidate, University of San Francisco School of Law, 2017; B.S., Massachusetts Maritime Academy, 2004. I would like to thank Professor Alice Kaswan for her input and guidance.

1. See Ramez Naam, *The Sunlight is Where the Energy Poverty Is*, RAMEZ NAAM BLOG (Nov. 14, 2013), <http://rameznaam.com/2013/11/14/the-sunlight-is-where-the-energy-poverty-is/> (comparing solar availability and solar poverty worldwide) [<https://perma.cc/6HBP-RZ2W>].

2. See Susannah Locke, *How does solar power work?: Chemist Paul Alivisatos explains how to generate electricity from sunlight*, SCIENTIFIC AMERICAN (Oct. 20, 2008), <https://www.scientificamerican.com/article/how-does-solar-power-work/> [<https://perma.cc/L63C-Z8VB>].

able energy sources and serve an increasingly vital role in the electric power distribution system.³

Distributed solar generation can also provide great fuel cost savings. DG offsets the cost of power generation because each kilowatt hour (“kWh”) generated results in one less unit of energy that the utility needs to purchase or generate. In addition, it reduces system losses that occur from the energy traveling over long distances, so that the energy retained in the wholesale generation must also be considered a savings. The utility also realizes a savings in operation and maintenance costs due to decreased use of the plant. Solar generation is unaffected by the unpredictability of natural gas or oil fuel prices, and therefore provides a safeguard against price fluctuation.⁴ Localized solar generation reduces the load on the utility systems, which results in a reduction in the amount of energy purchased on the wholesale market. “The presence of the solar systems not only decreases the need for energy, but also reduces the cost of wholesale energy to all consumers.”⁵

Distributed solar generation also helps society as a whole because it provides local jobs at higher rates than conventional generations. These jobs, in turn, translate into tax revenue which benefits all taxpayers. There are still some costs, however, involved with adding solar generation to the grid. “Infrastructural and operational expenses will be incurred to manage the flow of non-dispatchable solar system resources.”⁶ One of the primary motives and societal goals for solar and other renewable energy sources is to reduce the environmental impact of power generation. Environmental benefits of such systems include “future savings by mitigating environmental damage (sulfur dioxide emissions, water contamination, soil erosion, etc.).”⁷

Environmental concerns and a push for energy security have put the focus on renewable energy sources. Four main impediments have consistently stood in the way of solar’s growth and nationwide implementation. First, the technology is expensive and, even though the

3. Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid: Distributed Generation and Net Metering* 17 (N.Y.U. Sch. of L., Pub. L. Res. Paper No. 16-092016), <http://ssrn.com/abstract=2734911> or <http://dx.doi.org/10.2139/ssrn.2734911>.

4. Richard Perez et al., *The Value of Distributed Solar Electric Generation to New Jersey and Pennsylvania*, CLEAN POWER RESEARCH, 8 (Nov. 2012), <http://mseia.net/site/wp-content/uploads/2012/05/MSEIA-Final-Benefits-of-Solar-Report-2012-11-01.pdf> [<https://perma.cc/8PQW-NR94>].

5. *Id.* at 9.

6. *Id.* A non-dispatchable source of electricity is a generator of electrical energy that cannot be turned on or off in order to meet societies fluctuating electricity needs.

7. *Id.*

costs have declined significantly in recent years, it still exceeds the direct costs of other sources.⁸ Second, there is still a lack of storage capacity, making it less reliable because of its intermittency.⁹ Third, this unreliability “discourages investment in solar arrays”. Homeowners may not want to spend their money on panels if future development or growing trees might affect their access to sunlight in the future, creating even more intermittence problems.¹⁰ Lastly, there must be some integration with the established distribution systems, which can present obstacles for facilities distributing solar power throughout urban areas.¹¹

Third-party solar agreements attempt to resolve some of these impediments to solar growth. These agreements are a great way for customers to start generating their own clean energy without spending up to \$20,000 up front to get panels on their roof. These agreements work by third parties either leasing the system to consumers or selling consumers the power it generates. Not all states allow for this kind of third-party ownership but for those states that do, they have helped solar make financial sense by offering rebates, tax credits, and other financial incentives. These financial incentives allow homeowners to profit from buying a system outright and also make solar financially attractive to third-party solar companies who have the capital to build many systems and collect monthly payments.

This paper will discuss how different states are regulating these systems. It will also discuss why having affordable payment programs are important, the challenges these programs bring, and how to overcome them.

I. Background

A. The Inconsistency of Regulation

In the majority of states, there still no competition for utility services at the retail level, which poses barriers to solar providers in those states. In electricity markets where the customer is allowed to choose their power provider, the third party model may have fewer legislative hurdles.¹² “If the utility does not have monopoly power over a given

8. See CHRIS WOLD, DAVID HUNTER, & MELISSA POWERS, CLIMATE CHANGE AND THE LAW 842 (Paul Caron et al. eds., 2nd ed. 2013).

9. *Id.*

10. *Id.*; see also The Solar Shade Control Act, CAL. PUB. RES. CODE §§ 25980–82 (2016).

11. WOLD ET AL., *supra* note 8, at 842.

12. See KATHARINE KOLLINS ET AL., U.S. DEP’T OF ENERGY, SOLAR PV PROJECT FINANCING: REGULATORY AND LEGISLATIVE CHALLENGES FOR THIRD-PARTY PPA SYSTEM OWNERS 5 (2010).

customer base, the customer can choose to purchase power from a company that has placed a solar PV system on its roof or from a competitive supplier, or from both.”¹³

Inconsistency of regulation creating market inefficiencies because they discourage solar panel companies from expanding into states where they simply do not know whether they can operate. This will undoubtedly hinder efforts to effectively address climate change. The prices of conventional energy sources do not include the costs of environmental effect and climate damage, what economists call “externalities.” Because renewable energies have advantages as well as security of supply, it is a global imperative that they be given market access.

B. The Importance and Growth of Distributed Solar Energy

The solar industry has provided numerous benefits to society. Most readily apparent is the fact that the solar industry contributes approximately eighteen billion dollars a year to the United States economy.¹⁴ Jobs in this sector have grown exponentially: solar-type jobs now employ about 174,000 Americans with well-paying careers that support clean, sustainable energy.¹⁵ The solar market is becoming increasingly competitive with other energy sources, increasing its proportional share in the total new electric generation capacity.¹⁶ As the solar industry grows, so does its benefit to the economy as it is clear that this technology has become an integral part of the American energy platform.

As the country comes to the realization that we need to take immediate action to combat climate change, more government incentives to utilize these renewable resources are being enacted. For example, Congress placed many renewable energy financial incentives for development and utilization in the American Reinvestment and Recovery Act.¹⁷ The American Recovery and Reinvestment Act also provides tax incentives for individuals to invest in energy-efficient products.¹⁸ “One of the most important federal incentives for PV is

13. *Id.* at 5.

14. John R. Nolon, *Mitigating Climate Change by Zoning for Solar Energy Systems: Embracing Clean Energy Technology in Zoning's Centennial Year* ZONING & PLANNING L. REP. 4 (Dec. 2015) <http://ssrn.com/abstract=2733319>.

15. *Id.* at 4.

16. *Id.*

17. *Energy Incentives for Individuals in the American Recovery and Reinvestment Act*, IRS (Oct. 22, 2015), <https://www.irs.gov/uac/Energy-Incentives-for-Individuals-in-the-American-Recovery-and-Reinvestment-Act> [<https://perma.cc/5UT6-JG3M>].

18. *Id.*

the Investment Tax Credit (ITC),” which reduces the federal income tax liability for system owners based on the amount of capital invested in the project.¹⁹ One favorable consequence of some federal and state solar initiatives has been the decrease in the cost of manufacturing, installing, and maintaining the solar power systems.²⁰ Since 2006, these initiatives, along with independent technological advancement, contributed to the total cost of solar panel installation dropping more than 73%.²¹ As with every emerging technology, the prices for solar cells are falling with the increase in series production.

According to some projections, the use of solar power will continue to grow exponentially and by 2017 more than half of U.S. states could have rooftop solar that will produce energy as cheap as local electricity rates.²² This of course will depend on how much you pay for the electricity you buy from the local grid, how much sun you get, and how much you can get paid for the electricity you can produce from the solar power system.

C. The Role of Third Party Solar Agreements in the Continued Growth of the Solar Industry

In many states, an individual or business can have third party owned solar panels installed on their roof and either buy the power or lease the array from that third party. These power purchase or lease models drastically simplify the process of going solar, avoiding the work of managing tax credits, utility or state rebates, and system maintenance. With the growth seen in the last few years, the remaining immediate obstacle to solar power ownership is the cost. There are two main types of third party solar power agreements that are used to mitigate this cost: a solar lease or a solar power-purchase agreement (“PPA”). In a solar lease or solar PPA, a customer pays for the solar power system or the energy produced over a period of years, instead of having to pay for everything in one up-front payment. By using these types of agreements, customers can usually purchase solar for

19. *Energy Incentives for Individuals in the American Recovery and Reinvestment Act*, IRS (Oct. 22, 2015), <https://www.irs.gov/uac/energy-incentives-for-individuals-in-the-american-recovery-and-reinvestment-act> [https://perma.cc/5UT6-JG3M].

20. See Revesz & Unel, *supra* note 3.

21. *Id.* at 17.

22. *Installing Rooftop Solar Panels has Never Been More Affordable*, UNION OF CONCERNED SCIENTISTS (2014), <http://www.ucsusa.org/our-work/clean-energy/increase-renewable-energy/affordable-rooftop-solar-united-states#.VuNI-30rKW9> [https://perma.cc/2M6U-4NRH].

little or no money down, and will usually see energy savings immediately. These agreements can be structured in a variety of ways.

In the solar lease model, a customer will sign a contract with an installer and pay for the system over a period of years, instead of purchasing a photovoltaic (“PV”) system outright.²³ Solar leases can be designed so that customers don’t have to pay any up-front costs at all and also have the option to purchase the system before the end of the lease term.²⁴ The customer consumes the electricity that the system generates and may net-meter the excess if there is any.²⁵ Net-metering is the billing arrangement with the utility provider that determines if the customer will get credit for any excess renewable electricity delivered to the grid. Under the solar lease model, there is still some risk to the customer.²⁶ The installer will receive a fixed lease payment from the customer whether or not the system is operational or electricity is produced.²⁷ Since these lease payments are fixed, the property owner/lessee would either gain if the system overproduced or lose if the system under produced.²⁸ Also, the “host” is responsible for its operation and maintenance. Although these systems don’t require much daily upkeep, if something were to go wrong it is in the host’s best interest to get it fixed right away. Since the installer gets paid either way, they may not have that same incentive.²⁹

In the PPA model, an installer builds a system on a customer’s property at no cost to the customer. The customer then agrees to purchase all the energy they need from this solar system over a fixed period of time. The energy produced from the system offsets the customer’s own utility bill because the installer will sell that energy back to the customer.³⁰ Essentially, the host customer buys the services produced by the PV system rather than the PV system itself. The agreement works for the customer because the rate is usually much lower

23. *Third-Party Solar Financing*, SOLAR ENERGY INDUS. ASS’N, <http://www.seia.org/policy/finance-tax/third-party-financing> (last visited Jan. 22, 2017) [<https://perma.cc/VKK7-VFHA>].

24. *Id.*

25. See KOLLINS ET AL., *supra* note 12, at 17.

26. One emerging trend has been a large amount of customers defaulting on their lease payments and losing their systems.

27. See KOLLINS ET AL., *supra* note 12, at 18.

28. See *id.* at 19.

29. Another drawback won’t be discussed further in this article is that some lease contracts contain terms requiring homeowners to transfer their leases to the new owners in the event of a sale. If homes with leased solar systems are more difficult to sell than homes without solar, potential investors could be even more hesitant to enter the solar market.

30. *Third-party solar financing*, *supra* note 23.

than what they would typically have to pay their local utility company.³¹ Third party financing arrangements like these are particularly beneficial for entities that cannot claim tax credits (such as governments, schools, and nonprofits) and for entities that either lack initial funds to purchase a system or the desire to own and maintain a system.

At the end of the PPA contract term, property owners can usually extend the contract or even buy the system outright from the provider if they so choose.³² This third party owned PPA model allows customers to support solar power while avoiding the prohibitive cost because they escape most, if not all, of the initial costs and responsibilities for the systems installation, operation, and maintenance.³³ If the system malfunctions and electricity is not generated, the customer pays nothing and is not liable for repairs. Therefore, the provider has a strong incentive to ensure the proper operation of the equipment because the less electricity that is produced, the less electricity the customer can buy. Because the system owner is responsible for system performance, it only receives payments for power that is delivered. All of these responsibilities that typically transfer to the provider³⁴ yield benefits from this relationship since the agreement allows them to sell the excess power that the systems generate.³⁵

These models do require some cooperation with the local utility power grid since the utility serving the host customer provides an interconnection from the PV system to the grid, and continues its electric service with the host customer to cover the periods during which the system is producing less than the site's electric demand. Interconnection standards are the legal rules and procedures for "plugging" a renewable energy system into the power grid. This includes the technical and contractual terms that both system owners and utilities must follow.

31. *Id.*

32. *Id.*

33. Karlynn Cory, *Don't Be a Party Pooper! How States Can Attract 3rd-Party Owned PPA Financing*, NAT'L RENEWABLE ENERGY LAB. (Feb. 8, 2010, 1:00 AM), <https://financere.nrel.gov/finance/content/don%E2%80%99t-be-party-pooper-how-states-can-attract-3rd-party-owned-ppa-financing> [<https://perma.cc/9K83-H5UH>].

34. *Id.*

35. Julia Pyper, *Georgia Legislature Unanimously Approves Third-Party-Owned Rooftop Solar*, GREENTECH MEDIA (Mar. 27, 2015), <http://www.greentechmedia.com/articles/read/georgia-legislature-unanimously-approves-third-party-own>. . . [<https://perma.cc/J5FX-MHDE>]; *see also* GA. CODE ANN. § 46-3-1 (2015). This is referred to as "net-metering," when solar system owners cut their utility bills by receiving credit for any excess electricity they send to the state's power grid.

One of the most attractive benefits of the PPA model, besides the low or non-existing upfront costs, is that there are minimal continuing costs after construction because solar systems (1) do not have fuel needs, (2) require minimal maintenance, and (3) do not require on-site employees to run them. Also, when it is allowed, net-metering can create a system which allows for customers to have zero net energy costs. At any time of the day, a customer's solar system may produce more or less electricity than they need for their home or business. When the system's production exceeds the customer demand, the excess energy generation automatically goes through the electric meter into the utility grid, running the meter backwards to credit the customer's account. At other times of the day, the customer's electric demand may be higher than the renewable energy system is producing, and the customer relies on additional power needs from the utility.³⁶ Switching between solar system's power and the utility grid power is instantaneous and customers never notice any interruption in the flow of power.³⁷

Similar to car leasing, third party solar ownership can be valuable for a number of reasons, some of which have already been mentioned. The main reasons third party solar ownership can be valuable is that many consumers lack the full upfront investment capital for solar systems and lack knowledge of local permitting and incentive programs. Other entities, such as nonprofits and schools, cannot access tax credits and rebates that companies can since many incentives only apply to taxable entities.³⁸ For many others entities, installation and maintenance are major barriers.

II. The Challenges to Third Party Solar Power Purchase Agreements

Although these third party models seem like an ideal situation for everyone involved, there are still barriers to third party ownership which prevents these models from being utilized more often. Some states don't allow for PPAs to be used at all, while others have regula-

36. *Net Metering*, SOLAR ENERGY INDUS. ASS'N, <http://www.seia.org/policy/distributed-solar/net-metering> (last visited May 12, 2016) [<https://perma.cc/M7NC-F5GQ>].

37. As hinted to in this section, net-metering is not allowed in all states or is hindered by the use of caps. This process is important in the understanding of third party systems, however, the policy reasons for why we have caps or don't use this process is beyond the scope of this paper.

38. KOLLINS ET AL., *supra* note 12, at 33.

tory or economic barriers that make third party ownership model difficult or uneconomical.

The PPA model faces legislative and regulatory challenges in certain states where third party companies are classified as electric utilities, which subjects them to public utility commission regulation.³⁹ Regulating the third party PPA as a utility inflicts obstacles and costs, which make the model unprofitable for the provider.⁴⁰ It seems counterintuitive that states appear to want to increase DG PV capacity through economic incentives, yet still are unsuccessful in revising their regulatory structures to encourage increased PV development by openly exempting third party developers from oppressive regulation.

Although public utility laws differ from jurisdiction to jurisdiction, they usually address some of the same issues. Public utility commissions implement complete power over retail sales of electricity, requiring individuals selling retail electricity to be regulated as a utility. Most of these laws were created in a system where utilities used a monopoly for the sale of power. These regulations were implemented to guarantee fair pricing, reliable service, and prevent inefficient duplication of electric utility facilities.⁴¹

Some states subject third party developers to regulation through statutes that define electric utilities as “those that use power generation equipment for purposes other than personal use.”⁴² Because third party developers own the solar equipment that produces the electricity sold to the customer, they fit within this definition. Just the possibility of subjecting these companies to regulation as a utility will discourage the developers from investing.

In states where the PPA model is not allowed, some third party developers may still be able to offer solar leases.⁴³ However, four states in the U.S. currently prohibit third party ownership of solar installations altogether: Florida, Kentucky, Oklahoma and North Carolina.⁴⁴

III. Third Party Ownership of Solar Systems should be Allowed and Facilitated in all States

It may come as a surprise that not all states allow third party ownership or some states make it difficult to implement. There are many

39. *Id.* at 4.

40. *Id.* at 7.

41. *Id.* at 4.

42. *Id.* at 11.

43. *Third-party solar financing, supra* note 23.

44. Pyper, *supra* note 35.

regulatory challenges to executing these programs in most of these states. For example, because the solar industry is still new to the energy sector it is governed by archaic and obsolete regulations. Utility definitions do not clearly indicate how solar companies should be regulated or how they should interact with the established utility system. There are also issues with moving into newly deregulated territories as well as the “problem” of what to do with the excess energy produced.

IV. Regulatory Challenges of Third Party Ownership

There are several regulatory challenges to third party ownership whether or not the solar companies are believed to be acting as monopoly utilities and/or whether they are competitive electricity suppliers.⁴⁵ The old electricity system—written by legislatures and governed by public regulatory commissions—granted most electric companies a monopoly over their area of the electric grid. This monopoly made sense in the 20th century to raise capital for large-scale, low-cost power generation. These types of classifications depend on the regulation of the retail electricity market and, for most states, the laws and regulations do not clearly explain how these third party owners fit into the existing system.⁴⁶

One may ask why a state would try and prevent use of PPAs but the truth is, most of these state laws and regulations have been in place decades before these types of agreements were around and did not originate specifically to prevent the third party PPA model; they just haven’t yet been revisited.⁴⁷ Some issues result from lack of inclusion of solar systems in the terminology of regulations, leaving solar companies with no answers on what they can or cannot do.

V. Clarifying Definitions: Provider of Electric Services, Power Generation Equipment, and Electric Utility as Seller of Electricity

The vague definitions of “competitive supplier,” “provider of electric services,” and “public utility” confuses the issue of whether third party owned systems will require regulation since they provide service to the site host in the form of operations and maintenance.⁴⁸ Third party owned systems may be considered a utility in states that define

45. Cory, *supra* note 33.

46. *Id.*

47. KOLLINS ET AL., *supra* note 12, at 7.

48. *Id.* at 13.

electric utilities as “those that use power generation equipment for purposes other than personal use.”⁴⁹ This is because the solar PV equipment is owned by the developers, and that equipment generates power that is then sold to the site host. Also, standards for privately owned equipment are regulated under different authorities (for example, construction, electrical, mechanical, and plumbing codes) while standards for facilities serving the public fall under public utility regulation.

One state that currently bans third party solar agreements is Florida. The Supreme Court of Florida interpreted the statutory language from the Public Service Commission in 1987 and found that the statute’s “to the public” language included the sale of electricity to one person.⁵⁰ Although this ruling came at a time before the term “Power Purchase Agreement” was even used, this holding effectively bans third party PPAs in Florida. The court reasoned that a comprehensive reading of “to the public” was consistent with the legislative scheme because it “contemplates the granting of monopolies in the public interest.”⁵¹ This analysis applies to third party developers because any sale of electricity would subject the developer to regulation as a utility in a monopoly environment.

In more recent years, the Florida legislature considered exempting third party developers from this regulation as utilities in the 2011 Legislative Session with Proposed House Bill 1349 (Senate Bill 1724).⁵² The proposed bill excluded third party developers from the definition of “public utility,”⁵³ but unfortunately the bill failed to pass through the Energy and Utilities Subcommittee. Floridians have not yet given up and are currently trying to get a ballot initiative to the voters that will amend the Florida Constitution.⁵⁴ The initiative “limits or prevents government and electric utility imposed barriers to supplying local solar electricity.”⁵⁵ “Opponents of the initiative say that the constitutional change would also have the unintended result of forc-

49. *Id.* at 8.

50. *PW Ventures, Inc. v. Nichols*, 533 So.2d 281, 282–84 (Fla. 1988).

51. *Id.* at 283.

52. H.B. 1349, 2011 Reg. Sess. (Fla. 2011).

53. *Id.*

54. See Davis Burroughs, *Fight Over Solar Energy Shines on Florida*, MORNING CONSULT (Aug. 6, 2015), <https://morningconsult.com/2015/08/fight-over-solar-energy-shines-on-florida> [<https://perma.cc/YBR9-3J88>]; see also *Constitutional Amendment Petition: Limits or Prevents Barriers to Local Solar Electricity Supply* (Dec. 23, 2014), <http://www.flsolarchoice.org/wp-content/uploads/2015/01/64491-1.pdf> [<https://perma.cc/4TL8-GTUY>].

55. *Id.*

ing the state to subsidize solar energy in order to make it competitive with natural gas and coal-fired power plants.”⁵⁶

In those states that have not legislated on third party PPAs and clarified these definitions, solar panel companies still face legal uncertainty as to whether they are operating as an unlicensed electric utility in violation of a state’s laws or regulations. A law clarifying this would provide stability, an attractive consideration for potential solar panel companies.

In some states, the act of selling power to an end-use customer may mean that the third party provider is considered a utility and therefore needs to be regulated by utility regulators.⁵⁷ This often makes the PPA model “less economically appealing” since regulation of third party owned systems adds additional costs to the projects.⁵⁸ “Public utilities must utilize ratemaking to set rates.”⁵⁹ However, they still must manage operating expenses, such as “wages, salaries, supplies, maintenance, taxes, and research and development.” Utilities have the responsibility to provide required services that have been defined by their agreements and statutes of that jurisdiction, maintain quality levels defined by the commission, and comply with rates ordered or approved by commissions.⁶⁰

VI. Regulated Investor-Owned Utilities, Municipal Utilities, and Rural Cooperatives; Concern over Opting into Deregulation of Electricity Generation

Most municipal utilities (“munis”) and rural cooperatives (“co-ops”) are regulated by the local government instead of opening up the territory to outside competition. Traditionally, munis and co-ops operate under different rules and regulations than investor-owned utilities.⁶¹ A single, regulated entity can generate, transmit, and distribute electricity for less than a competitive market. Eliminating competition would remove the costs of duplicative generation, transmission, and distribution systems that provide the same services to consumers in the same general location. Utility monopolies are threatened by third party solar systems for different reasons: the more

56. *Id.*

57. KOLLINS ET AL., *supra* note 12, at 4.

58. *Id.* at 7.

59. *Utility Ratemaking*, WIKIPEDIA, https://en.wikipedia.org/wiki/Utility_ratemaking (last visited April 13, 2017) [<https://perma.cc/Y39G-Z5P6>].

60. *Id.*

61. KOLLINS ET AL., *supra* note 12, at 5.

individual solar installations, the fewer new power plants are built by utilities; customers with solar panels buy less energy from the grid operated by the utilities; and utilities may have to pay owners of home solar installations for the surplus energy their panels return to the grid.⁶²

The current structure of the United States electricity markets may significantly affect third party owned utility models. Many states don't operate their utilities as pure monopolies but as a hybrid form of government run entity that may purchase some power from entities whose primary function is to generate power for resale. Oregon is an example of a hybrid electricity market where third party ownership is permitted in combination with investor-owned utilities, munis, and co-ops who provide electricity to customers.⁶³ Since most electricity markets in the United States have not restructured to allow customer choice, any model in which a body other than the monopoly utility sells electricity straight to customers may be banned. This issue could significantly challenge third party owned models.⁶⁴

Oklahoma exemplifies how not allowing customer choice may result in a ban of third party owned models. Oklahoma defines a public entity as any "company, individuals, their trustees, lessees, or receivers, . . . that now or hereafter may own, operate, or manage any . . . equipment, or any part thereof, directly or indirectly, for public use, or may supply any commodity to be furnished to the public."⁶⁵ Here, it is fairly clear that a third party solar company would be considered a public utility and subjected to regulation as such. In Oklahoma, the electric utilities are regulated by the Oklahoma Corporation Commission. The Commission regulates prices and service reliability of three investor-owned electric utilities providing retail electric service to much of the state (excluding munis and co-ops).⁶⁶ These companies have been granted a monopoly in their service areas while surrendering pricing authority to state regulators. Since the law both classifies third party PPA developers as utilities and only allows for certain utilities to be in the market, there is an effective ban on these types of agreements in the state.

62. Alex Kotch, *Duke Energy vs. Solar Energy: Battle Over Solar Heats Up in North Carolina*, EcoWATCH (Mar. 13, 2016 10:00 AM), <http://ecowatch.com/2016/03/13/duke-energy-battle-solar/> [<https://perma.cc/4CDV-PV8S>].

63. KOLLINS ET AL., *supra* note 12, at 5.

64. *Id.*

65. OKLA. STAT. tit. 17, § 151 (2016).

66. *Electric Utilities*, OKLA. CORP. COMM'N, PUB. UTIL. DIV., <http://www.occeweb.com/pu/pureelectric.htm> (last visited May 13, 2016) [<https://perma.cc/9QCW-P2CC>].

Kentucky is run similarly to Oklahoma. Analogous wording in its regulations classifies third party solar developers as utilities.⁶⁷ Most of the state's electric utilities' rates are regulated by the Kentucky Public Service Commission (again, except for munis and co-ops). The Commission has the legal responsibility to enforce territorial boundaries of all electric utilities.⁶⁸ Those boundaries do not allow for the addition of another utility (i.e., a third party solar company).

North Carolina has gone above and beyond to keep PPAs out. Regulations in North Carolina limit power sales by anyone but the regulated utility and, as with the states above, consider third party solar companies as a utility.⁶⁹ North Carolinians tried to fix this classification by passing the Energy Freedom Act.⁷⁰ The Energy Freedom Act would have allowed third party ownership and directed energy sales through solar third party ownership.⁷¹ The bill, HB 245, never got out of committee, because Duke Energy lobbied furiously against the bill to protect its monopoly over North Carolina.⁷² Actively campaigning against solar policies that benefit individuals, Duke Energy misleadingly claimed that rooftop solar hurts the poor by causing rate increases.⁷³

The utility monopoly is no longer an ideal way of doing business. When first implemented, it served our needs by giving us reliable and affordable electricity. It gave utilities comfortable, reliable returns on their investments from regulators at Public Utilities Commissions. In an era of incremental change, where stability was prized over innovation, this monopoly was largely in the public's interest. Now, there is competition in the wholesale generation market across the country and in many states.

"Even in a market that has been deregulated, there may still not be enough incentives for customers to utilize the third party PPA."⁷⁴ Utilities in deregulated markets must separate all ownership in generation and transmission. They are also responsible for distribution, op-

67. KY. REV. STAT. ANN. § 278.010(3) (West 2016).

68. *See generally About the Public Service Commission*, KY. PUB. SERV. COMM'N, <http://psc.ky.gov/Home/About#AbtComm> (last visited May 13, 2016) [<https://perma.cc/XQZ2-T77L>].

69. *See generally* N.C. GEN. STAT. § 62-3(23) (2016).

70. *In NC, Everyone Can Win with Third-Party Sales of Electricity*, N.C. SUSTAINABLE ENERGY ASS'N (Mar. 17, 2015), <http://www.energync.org/blogpost/1249845/211404/In-NC-Every-one-Can-Win-with-Third-Party-Sales-of-Electricity> [<https://perma.cc/MZ3Y-QYYP>].

71. *Id.*

72. Kotch, *supra* note 62.

73. *Id.*

74. KOLLINS ET AL., *supra* note 12, at 5.

eration, and maintenance from the interconnection at the grid to the meter; billing the ratepayer; and acting as the provider.⁷⁵ But there still must be some cooperation between the entities. Generation competition requires open access to transmission lines to the extent that the transmission lines can bear the electric load. Laws that make third party PPAs legal and encourage their implementation can create a host of new competitors in the form of solar panel companies eager to serve customers across that state. This facilitates states' goals of deregulation and increasing consumer choice.

VII. Determining Whether Third Party Owned Systems May Net-meter

Net-metering, for customers who lease PV systems and generate their own electricity, allows electricity to flow both to and from the customer, while only billing the consumer for the "net" amount consumed. The on-site generation of energy produced by third party owned systems could help the distribution of systems if net-metering is allowed because it would reduce the electricity that is purchased from the utility and credit excess energy to the customer bill.⁷⁶ However, because the consumer's demand for electricity is met by the solar panel company, business is taken away from electric utilities, which, in many states, have exclusive jurisdiction over a given service territory.

Net-metering restrictions make the third party PPA financially unattractive for the customer because they require customers to, essentially, pay for the electricity twice. Under most PPAs, the customer is required to purchase all of the solar electricity produced by the PV system from the developer. If the customer cannot net excess generation, the customer will waste the extra electricity that has already been paid for and will still have to purchase the energy from the utility when the system is not producing enough solar energy. There is no incentive to use a third party PPA under these conditions.⁷⁷

Many states that do allow net-metering also have caps either on the size of the individual facilities or on the total enrollment.⁷⁸ Both of these caps make it difficult for renewable developers to justify the legal expenses. By lifting or raising these caps, states can increase the investment returns on such projects, further encouraging develop-

75. *Id.*

76. *Id.* at 15.

77. *Id.* at 16.

78. See CAL. PUB. UTIL. CODE § 2827 (2016) (limiting net metering enrollment to 2.5% of the utility's aggregate customer peak demand).

ment. Another option is for states to ensure that consumers with third party PPAs continue to pay their share of a utility's non-operating costs by cost shifting, allowing the utility to charge a fee for consumers' net-metering benefits.⁷⁹ The big utility's worry is that as more and more solar power-producing homes pay less and less each month, the cost for traditional consumers will go up, making a jump to solar much more appealing. They also fear that the third party developers will be profiting too much. These utility companies lobby hard for regulation and are a key reason states have these laws. However, states that do not allow net-metering schemes that are competitive with other states run the risk of being on the losing side of the "laboratories of democracy."⁸⁰

VIII. Proposal to Mitigate Third Party Challenges

The Iowa Supreme Court concluded that the unique characteristic of a public utility is the degree to which its sales are "clothed with public interest."⁸¹ Utilities are "clothed" with the public interest, because they offer an indispensable service provided in the same way to all customers. Third party solar providers should not be considered similarly "clothed" because customers are dependent from the electric utility for basic electrical service. There is no risk of unequal bargaining power because there is sufficient competition among developers offering third party PPAs.⁸²

Regulation of third party developers as utilities is not necessary to ensure the reliability and safety of the grid. Regulating utilities to ensure reliable delivery of electricity is necessary because customers are dependent upon the utility to supply it. With a third party PPA, however, customers are not reliant on the generation of power supplied

79. One reason states may have caps on net metering is they believe it poses a problem of inequity for utilities and consumers who are not able to install solar panels on their own or through a PPA. This is because as the electric utility's total demand decreases, and consumers sell their surplus electricity back to the utility, the utility's dependable consumer base shrinks; therefore, the utility must shift its non-operating costs. In effect, this leaves the less-fortunate consumers with most of the utility's non-operating expenses, increasing their electrical bill while the more-fortunate consumer's bill drops.

80. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) ("[A] state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.").

81. *Iowa State Commerce Comm'n v. N. Nat. Gas Co.*, 161 N.W.2d 111, 115 (Iowa 1968); see also IOWA CODE § 476.1(3)(a) (2016) (classifying all entities that furnish electricity to the public as "public" utilities).

82. See KOLLINS ET AL., *supra* note 12, at 6.

by the PV system, because customers remain connected to the utility and continue to use utility power.

California created a legislative solution which can pose as an example of how states can incorporate the third party solar models into their current regulatory model.⁸³ In California, utilities were defined as sellers of electricity.⁸⁴ This created regulatory uncertainty for solar developers trying to use the PPA model. California then came up with a solution to the utility regulation issue by creating an exception for third party owners. Public Utilities Code 218⁸⁵ was enacted to allow certain ownership and technologies, and it encourages long-term, customer-sited energy development.⁸⁶ Now, in California, an “[e]lectrical corporation” does not include an “independent solar energy producer,” which is defined as:

a corporation or person employing one or more solar energy systems for the generation of electricity for . . . [i]ts own use or the use of its tenants[;] [t]he use of, or sale to, not more than two other entities or persons per generation system solely for use on the real property on which the electricity is generated, or on real property immediately adjacent thereto.⁸⁷

This regulation now allows third party owners to sell to residential customers on an individual basis and opens the door for power sales to multi-family housing and multi-tenant commercial units.⁸⁸ This legislative solution encourages some degree of renewable energy generation by exempting certain small-scale, distributed generation sources selling in retail, from some state regulation. Also, California’s net-metering rules also promote the use of third party PPAs since California does not restrict net-metering to customer-owned PV systems.⁸⁹

California still allows for some oversight in these matters. The regulation requires third party developers to announce the presence of the third party PPA with the county recorder.⁹⁰ California also requires distributed generators to register with the Public Utilities Com-

83. Colorado, Michigan, New Jersey, and New York are some other states that also have statutes that unambiguously exempt solar PPA developers from regulation as public utilities.

84. KOLLINS ET AL., *supra* note 12, at 7.

85. CAL. PUB. UTIL. CODE § 218 (2016).

86. KOLLINS ET AL., *supra* note 12, at 8.

87. CAL. PUB. UTIL. CODE § 2868(b) (2016).

88. KOLLINS ET AL., *supra* note 12, at 8.

89. *See* CAL. PUB. UTIL. CODE § 2827(a) (2016).

90. CAL. PUB. UTIL. CODE § 2869(c)(1) (2016).

mission, so that in the event of a problem, the state will know which properties are generating electricity.⁹¹

After these changes, California experienced an increase in third party PPAs for residential and non-residential site owners.⁹² California now has more citizens choosing third party PPAs over regular cash purchases.⁹³ In order to encourage more solar use and promote the use of renewable resources, states should follow California's lead and legislatively exempt third party developers from regulation as state utilities but still maintain oversight authority over the developers to protect consumers.

Another state that has gone the legislative route is New Jersey, which has coordinated its laws and regulations to motivate solar PV capacity financed by third party PPAs. New Jersey defines an "on-site generation facility" as:

a generation facility . . . and equipment and services appurtenant to electric sales by such facility to the end use customer located on the property or on property contiguous to the property on which the end user is located. An on-site generation facility shall not be considered a public utility.⁹⁴

This statute explicitly exempts third party developers from regulation as utilities. Similar to California, New Jersey's net-metering laws are beneficial to third party PPAs.⁹⁵ New Jersey's policies, simplifying third party solar development, have supported the increase in PV distributed generation within the state.

Conclusion

Although the price of solar equipment has decreased and continues to, and there are many financial incentives available to offset the cost, securing capital to install these systems still remains the largest barrier to installation. The solar companies have come up with ways, through the third party financing systems, for people to be able to take advantage of these systems without the exorbitant cost. Statutes regulating third party PPAs as utilities are either a result of the state's broadly worded definition of "utility," or the intentional building of a

91. See generally CAL. PUB. UTIL. CODE § 2869(e) (West 2016).

92. Eric Wesoff, *Third-Party-Owned Solar Dominates the California Market*, GREENTECH MEDIA (Sept. 30, 2011), <http://www.greentechmedia.com/articles/read/Third-Party-Owned-Solar-Drives-California-Market> [https://perma.cc/KB5V-RPAX].

93. *Id.*

94. See N.J. STAT. ANN. § 48:3-51 (2016).

95. See N.J. STAT. ANN. § 48:3-87 (2016) (New Jersey imposes no net metering limits and requires all investor-owned utilities and energy suppliers to net meter).

wall to minimize change and maintain the monopoly strongholds. While the regulation of utilities is necessary to ensure consumer protection and grid reliability, regulation of third party PPAs as utilities is completely unnecessary to achieve these objectives.

In order to create more solar PV capacity, states should follow the direction of California and New Jersey and legislatively exempt third party developers from regulation as state utilities. The best way to provide for this exemption and to drive out any third party developer investment anxiety is to provide an exemption in statute form so that it is clear to all as to what these companies are or are not allowed to do.

States seeking to encourage renewable development have the tools at their disposal to knock down these walls. States can, through the legislative or administrative process, exempt renewable third party PPAs from the regulatory reach as public utilities. They should include provisions clarifying that these third party generators are not electric utilities subject to regulatory licensing protocol or alter their current definition of electric utility to provide the same clarity. These clarifications and definitions provide solar panel companies with confidence that they can operate efficiently and legally. This allows for more efficient utilization of tax credits and it enables parties with expertise to undertake the operation and maintenance requirements.

Net-metering regulations restricting customers from net-metering with third party owned equipment is designed to protect against third party developers profiting as wholesalers, and to prevent the utility industry from heading down the slippery slope of no longer needing the fossil fuel industry.⁹⁶ State legislatures should encourage regulation that supports net-metering for third party PPA systems by amending their public utilities code to either require the approval of these regulations or at least suggest support for it.⁹⁷

States that are apprehensive that net-metering will persuade too many customers to “jump on the solar bandwagon,” which may cause the regulated utility to have a large increase of rates. And if states are concerned that third party contractors will profit from over production, they should allow customers with third party PPAs to net-meter but apply narrow generation restrictions, like caps, until the effects can be properly assessed. Although too stringent of a cap can hinder the growth of DG PV systems, they are better than not allowing any

96. Just to be clear, this is not necessarily a bad thing; it is a perceived negative effect by the regulated industry.

97. See KOLLINS ET AL., *supra* note 12, at 16.

net-metering at all and may be a suitable interim solution for jurisdictions that are on the fence.

Everyone that wants to utilize a localized PV system should be able to. It's affordable and flexible (you can buy, lease, or borrow). There are low to zero upfront costs. It's worry-free. With a PPA, you don't own the equipment, so you don't have to worry about installation, monitoring, and repairs. You have control over your own electric bill and don't have to worry about a higher bill if the panels produce more electricity. All roads seem to lead to a bright, solar future.

It would seem now that the largest obstacle for solar PV systems is *not* securing capital to install these systems, but, rather, the states' regulatory environment. The future of our planet is more important than the continued rule of a few energy titans, clinging to their monopolies, and we should be doing everything available at our disposal to ensure that we are not ruining what we have left for the future generations. Change is not the enemy. Change is good. Change is necessary.