PUBLICATION

Part 1: Challenges in Solar Equipment Finance

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Challenges in Solar Equipment Finance

Part One of a Two-Part Article

In recent years, solar electricity generation systems have become increasingly popular in certain parts of the country. (For ease of reference, this article will refer to such systems, including solar photovoltaic panels, inverters, racking and related equipment as “solar equipment.”) Growth in solar-generation capacity has not been evenly distributed across the country, however, as some states' policies and laws are solar-friendly, while those in other states pose barriers. One such barrier in many states is the lack of access to financing.

Although the costs of solar equipment have decreased dramatically in recent years, many businesses and individuals need access to financing in order to pay the upfront costs of such equipment. In response to this need, many companies active in equipment leasing and finance — some long-standing members of the industry as well as new ones — have stepped in to offer financing solutions for solar equipment. However, many states have laws that limit such participants' flexibility to use certain financing structures. Some states limit financing mechanisms structured as sales of electricity (power purchase agreements), either expressly or because of lack of clarity in the application of existing laws. State laws can also be ambiguous in their application to leases of solar equipment.

This two-part article examines the state laws that limit equipment financiers' ability to offer these solar equipment financing options to distributed generation customers and explores the implications of such limits on the financing industry and its customers. Part One, herein, compares various methods commonly used to finance solar equipment, and then explores state laws that block one such method — the power purchase agreement. Part Two (to be published in next month' issue), will explore laws related to the leasing of solar equipment and discusses the inequitable results that follow from the patchwork of laws currently in place.

Common Solar Finance Mechanisms

The solar market can be broadly divided into “utility-scale” and “distributed generation” installations. Utility-scale projects are large solar projects designed to sell electricity to the grid. Such projects may be owned by the utility or owned by an independent power producer that contractually agrees to sell all the power produced by the project to the utility. In contrast, distributed generation projects are generally intended to satisfy all or a portion of the energy needs of the owner or occupant of the premises where the equipment is installed, such as rooftop systems that generate electricity to be used on the premises. This article focuses on financing of distributed generation projects.

The costs of solar equipment have come down rapidly in recent years. Installed system prices have declined by 6% to 12% per year, on average (depending on market segment) each year since 1998, according to a recent study by the Lawrence Berkley National Laboratory. See G. Barbose et al., Tracking the Sun VIII, the Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States, 15, Lawrence Berkeley Nat'l Lab. (Aug. 2015). As a result, in many places, distributed generation customers can meet their

energy needs with self-generated solar energy at a lower cost than buying electricity from their local utility. See http://bit.ly/2blbZn0.

Despite recent decreases in cost, however, the upfront costs of installing solar equipment remain substantial, and it can take years for a distributed generation customer to recoup the costs of such an investment through savings on the customer's electricity bills. The median residential solar installation is around 6 kW, which costs approximately $25,000, depending on location.

A larger, more expensive solar array would be needed to serve the energy needs of many types of businesses, such as manufacturing facilities or large retail stores. A 500 kW system, which is the size of the average Walmart installation, can cost in the neighborhood of $2 million. Many potential distributed generation customers either do not have sufficient cash available to come out of pocket for such a substantial upfront amount, or prefer to finance the purchase of such systems in order to keep more cash on hand for other expenses. The availability of various tax incentives may also render certain types of financing more efficient for certain customers than if they paid for their own system with available cash.

The most common ways for such customers to finance their acquisition of solar energy are by entering into traditional loan documentation as borrower, solar equipment leases as lessee, or power purchase agreements (PPAs) as buyer. As discussed below, each type of financing mechanism has different characteristics that appeal to different market segments.

PPAs vs. Solar Leases

In general, a PPA is an agreement in which a developer agrees to install solar equipment on its customer's premises, and sell electricity produced by that equipment to the customer for an agreed rate per month for each kilowatt hour (“kWh”) of electricity that is generated. In contrast, a solar lease is an agreement in which a developer leases solar equipment to the customer for a fixed amount of rent, payable monthly or on an agreed payment schedule, and installs the equipment on the customer's premises. (Note that in some leases, the payments may slowly escalate over the term of the lease, but such an escalator does not affect the analysis herein.) The key element of a traditional “lease” is that the payments are made regardless of the amount of electricity that is generated. As will be discussed in further detail below, in either arrangement, developers may partner with investors that provide the upfront capital.

In both PPA and leasing arrangements, the customer does not own the solar equipment, pays little to no upfront costs, and often has an option to purchase the system at the end of the contract term. The developer also may retain responsibility for operations and maintenance.

In a PPA or leasing arrangement, the owner of the equipment is generally entitled to take any applicable tax benefits, including the federal investment tax credit (the ITC, which is currently 30% of eligible costs), federal accelerated depreciation (such as Modified Accelerated Capital-Recovery System, or MACRS depreciation), and any applicable state or local tax benefits. (This analysis assumes a “true lease” rather than a lease that is, in substance, a loan.) A portion of these tax savings can then be passed on to the customer.

Depending on the terms of the arrangement, the developer may also own any renewable energy certificates (RECs) or other environmental attributes generated by the system, which the developer may be able to sell separately to another party. Similarly, in a PPA arrangement (but not typically in a leasing arrangement), the developer may retain the ability to sell any excess electricity produced by the system to the utility grid. These additional revenue streams may allow the developer to further reduce the payments owed by the customer. In many areas, these arrangements can be very attractive to purchasers of electricity (sometimes referred to herein as “consumers,” without implying that the electricity would necessarily be used primarily for personal,

family or household use), because a consumer may be able to replace its monthly electric utility bill with a PPA or lease expected to result in lower monthly payments.

The key difference between a PPA and leasing arrangement is that a PPA is structured as a sale of electricity to the customer, such that the amount of the payments made by the customer will depend on how much electricity the equipment generates. In contrast, in a traditional leasing arrangement, the payments will remain fixed regardless of how much electricity is generated. Accordingly, in a traditional solar equipment lease, the customer bears the risk of the equipment generating less electricity than may have been predicted at the outset of the arrangement.

The Loan Option

A customer with access to credit could simply take out a loan from a bank. The benefits of this approach are that it is a relatively straightforward transaction, and the customer owns the equipment (subject to whatever liens or claims the bank could assert if the loan were not repaid) and can therefore claim the tax benefits accruing to the equipment owner. Like a traditional equipment lease, loan payments are due irrespective of the amount of electricity generated by the solar equipment.

However, loans are not good options for some types of customers. Some distributed generation customers either do not have a sufficiently high credit rating or collateral available to qualify for such a loan, do not have sufficient taxable income to benefit from various tax incentives (including the ITC), or already have too many loans outstanding to qualify for additional debt. PPAs or leases can be better alternatives for these customers.

Similarly, many persons and entities that are interested in going solar have no place to install solar equipment. For example, businesses that occupy leased office space, and apartment dwellers, do not own the roofs of the buildings they occupy. Loans are not options for these parties, but a building occupant could enter into a PPA or lease with the building owner.

Entities that do not pay taxes, such as nonprofits and government entities, cannot benefit from the tax advantages available to solar equipment owners. Accordingly, buying solar equipment outright or obtaining a loan to buy such equipment would be more expensive for these entities than a PPA, which would pass on some of the tax savings in the form of lower electricity payments. Leases are also not a good option for non-taxable entities. U.S. Treasury regulations prohibit financing entities from taking the ITC when the solar equipment is leased by a non-taxable entity. See Treas. Reg. § 1.48-1(j). Therefore, PPAs are more attractive for non-taxable entities than outright ownership, loans or leases.

These downsides to the traditional debt financing model explain the popularity of solar leases and PPAs among distributed generation customers. PPAs and solar leases can help distributed generation customers obtain the benefits of cheaper solar energy without substantial upfront costs, even where a loan is not an effective option.

As a result, such financing arrangements (commonly known as third-party ownership or third-party financing) have become immensely popular and have represented a large percentage of new financings in areas where they are permitted. In 2015, 65% of commercial installations were financed through third-party ownership structures, according to a recent study by GTM Research. See N. Litvak, U.S. Commercial Solar Landscape, 2016-2020, GTM Research (2015). For residential installations, the third party ownership model's share of the national market represented 62% in 2012, 67% in 2013, and 72% in 2014. See Barbose at 12, n. 4. According to Forbes, “The U.S. solar energy boom would not be possible” without these types of financing arrangements. See http://bit.ly/2aMlpX1.

As discussed above, certain types of customers may need or prefer one type of structure rather than another, for legitimate reasons. However, in some states the available options may be limited. As discussed below, certain states have imposed limits on PPAs or have laws that may make the legality of PPAs or leasing ambiguous.

Limits on PPAs

A few states have clearly prohibited non-utilities from entering into PPAs with distributed generation customers, either by statute, judicial decision, or opinion of the applicable regulatory authority. In others, the legality of PPAs is unclear or ambiguous. According to the latest map published by the Database of State Incentives for Renewables & Efficiency, approximately half of the states in the U.S. have prohibited PPAs between distributed generation customers and non-utilities, have laws that seem to prohibit such arrangements, or have laws that are ambiguous or unclear as to the legality of such arrangements. See generally map and citations published at http://bit.ly/2aO4Rnz.

Among the other half of states that permit PPAs, some have passed statutes expressly permitting PPAs, while others have legalized the arrangement through the decisions of courts or regulatory authorities. Among the states where PPAs are legal, some have limitations as to the size of the system or the type of entity that may enter into such agreements.

In regulated electricity markets, except where legislation expressly addresses the legality of distributed generation customers' entering into PPAs with non-utilities, the legality of such arrangements typically depends upon the interpretation of pre-existing utility monopoly laws. (For a more detailed discussion, see K. Kollins et al., National Renewable Energy Laboratory, U.S. Dept. of Energy, Solar PV Project Financing: Regulatory and Legislative Challenges for Third-Party PPA System Owners (2010), available at http://bit.ly/2aE0HgL.)

In states or localities that have not passed specific legislation regarding this issue, some courts and regulatory authorities have been called upon to determine whether non-utilities that sell power to distributed generation customers under PPAs fall within the applicable definition of a utility or electric supplier (or similar term used in the particular jurisdiction). Although laws vary from state to state, a utility or electric supplier is often defined as a person or entity engaged in furnishing or supplying electricity to the public. In some cases, a utility or electric supplier may be defined to include persons or entities that use electricity generating equipment for things other than personal use.

The question of whether a developer falls within the definition of a utility or electric supplier when it enters into a PPA with a distributed generation customer has been decided differently in different states, and in some areas the question has not yet been decided. These laws were written before self-generation of solar electricity was an option for most people and before the third-party ownership financing model was developed. Now that the laws are being applied in a much different world in which they were written, states are reaching different conclusions even in cases where the facts are much the same.

In some states, courts or regulatory authorities have reasoned that a PPA executed in connection with a financing arrangement between two parties should not be sufficient to classify the developer as a utility or electric supplier.

In the Courts

The Iowa Supreme Court took this approach in a case where a developer planned to build and own a solar electric generation system on property owned by the city of Dubuque. In SZ Enterprises, LLC v. Iowa Utilities

Board, 850 N.W.2d 441 (Iowa 2014), the parties proposed to enter into a PPA pursuant to which the city would purchase all of the electricity generated by the system from the developer on a per kWh basis.

The developer sought a declaratory ruling from the Iowa Utilities Board (the Board), asking it to determine whether the developer, under such an arrangement, would be considered a "public utility" or an "electric utility" under Iowa statutes governing utilities. The Board found that the developer would be a public utility and was therefore prohibited from selling electricity to the city. The decision underwent multiple appeals, and the ultimately the Iowa Supreme Court found in favor of the developer, holding that it was neither a "public utility" or "electric utility" under state law. The court reasoned, in part, that this sort of arrangement, essentially providing financing for solar equipment, should not be sufficient to "draw an entity into the fly trap of public regulation." See SZ Enterprises, 850 N.W.2d at 467.

Other states have taken the opposite approach. In most states that have disallowed PPAs, such prohibition is the result of decisions by courts or state regulatory authorities. (But see S.C. Code Ann. §§ 58-27-2610(E) and 58-27-2630(A)(9)(effective June 2014)). Such judicial or regulatory decisions have interpreted existing laws to rule that parties entering into PPA arrangements with distributed generation customers are acting as utilities, pursuant to the applicable definition.

The most recent decision coming down on the side opposed to PPAs occurred in North Carolina. In that case, a nonprofit organization installed a solar photovoltaic system on the roof of a local church and entered into a PPA with the church to sell the electricity generated by the system. The nonprofit filed a petition with the North Carolina Utilities Commission for a declaratory ruling and determination that its proposed activities would not cause it to be regarded as a "public utility" pursuant to the North Carolina Public Utilities Act.

On April 15, 2016, the North Carolina Utilities Commission found that the nonprofit was engaged in unregulated sales of electricity to or for the public in violation of the Public Utilities Act. See In re North Carolina Waste Awareness and Reduction Network, 2016 N.C. PUC LEXIS 235, Docket No. SP-100, Sub 31 (Apr. 15, 2016). The nonprofit filed a Notice of Appeal with the North Carolina Utilities Commission on May 16, 2016, available at http://bit.ly/2aNSepx. The appeal has not yet been decided.

In states where utilities have exclusive service areas, suppliers of electricity are generally prohibited from selling electricity to customers who are located within the exclusive service territory of another utility.

Conclusion

Utilities are also generally subject to strict regulation by local regulatory authorities. Developers, banks and finance companies are loath to be subject to the complicated and burdensome state laws and regulations applicable to utilities, and the mere possibility of falling into such a compliance nightmare is sufficient to deter potential participants in a PPA financing structure from engaging in acts that could arguably place them within the definition of a utility. Accordingly, the few states that have clearly prohibited PPAs are not the only states of concern to the solar finance industry. Even state laws that are ambiguous as to the legality of PPAs have a chilling effect on the availability of financing options for solar generating equipment.

Part Two of this article will discuss state laws related to solar leases and explores how state law limitations on the financing of solar equipment affect the financing industry and its customers.