

## FAQ's-Solar 101

### **Why is going solar a good idea for my organization?**

Incorporating renewable energy into your electricity consumption is a simple way to decrease your organization's carbon footprint. And while the environmental benefits of solar energy are easy enough to embrace, often the upfront cost, or in some areas ongoing costs, of paying for a renewable energy source puts clean energy out of reach for non-profits and low income consumers. At Community Renewable Energy, we work hard to develop solar models that address that specific barrier and make solar accessible to more people. Our solar removes the upfront costs of solar installation for our hosts, and provides the clean energy at market or below market rates to ensure this clean energy is also delivering financial benefits to our hosts. CRE works to attract low-cost financing, federal tax credits, and other financial incentives to deliver energy savings to your organization. Through CRE solar is providing both environmental and financial benefits to our non-profit partners.

### **What is a Power Purchase Agreement? (PPA)**

A Power Purchase Agreement (PPA) is a contract between a solar developer (such as Community Renewable Energy) and an electricity user, such as a non-profit organization. A PPA governs all aspects of an agreement to develop, operate and maintain a solar facility. Everything from the price of electricity, to who will manage operations and maintenance, to purchase options for the non-profit should they be interested in buying the asset, to insurance, and more are outlined in the PPA. Not all Power Purchase Agreements are the same, but they all cover the same basic foundations. Our standard PPA is based on the National Renewable Energy Laboratories standard, and has been modified to ensure additional issues or scenarios most relevant to non-profit operations are proactively anticipated. We have used our abundant experience working with non-profits to ensure that any questions your board, facilities management, or leadership team might need answered can be thought through before a project breaks ground. Our goal is to make our Power Purchase Agreement as transparent as possible, and so we have annotated a generic version of our PPA to help decode the legalese!

## **How long does a solar system last?**

As solar technology continues to improve, the lifespan of the equipment increases. You can expect your system to produce electricity for your organization for the next 30-35 years. (Some are even using 45-year estimates.) However for underwriting and other financing reasons, Power Purchase Agreement terms are generally shorter than that, between 15 and 25 years. This means that once your PPA is complete, your system could still have anywhere between 10 and 20 years of producing power.

## **What happens at the end of a solar system's life?**

When your solar facility has reached the end of its life, it can be removed from your roof and disposed of. There are several companies that recycle solar panels and we anticipate that when your system is ready to retire in 20-35 years there will be even more options for its disposal. We highly encourage you to ask this question of anyone you might be considering working with, as each solar developer and installer will have their own individual policies of how they handle the end of your PPA term. At CRE we will take care of the cost of removing the system at the end of your PPA, or, if you'd prefer to take ownership of the system for the remaining 15 years of the system's lifespan, you can dispose of it later. Either way, we will share all information about cost and process before you have to make that decision in year 20, so that you are fully equipped with the information you need to make the best decision for your organization.

## **How big should I build my system?**

Given our regular electricity consumption, we rarely have enough space to build solar that will exceed what you use in a day. That being said, our team will do a full analysis to ensure that we have matched your solar potential with your energy needs. Within most regulatory frameworks, oversizing your system doesn't make financial sense. Most regulation either prevents excess energy from being purchased by your utility, or reduces the price that it can be bought from you to be of nominal worth; therefore, in our analyses we rarely recommend designing

systems that produce more than 100% of your annual energy needs. However, part of our analysis will be a review of your local utility and its regulatory framework. Usually the availability of land or roof space will serve as the main determinant of system size and part of our feasibility analysis includes review of the local regulatory framework, review of current energy consumption and projection of potential energy production.

### **What is net metering?**

Almost all utilities have a policy called net metering that ensures that any electricity you produce on your site (but is not immediately consumed) will be fully credited for consumption later. This is a billing policy from the utility designed to promote solar development. This allows you to produce energy that goes into the grid for immediate use by whoever needs energy at that moment, even as you continue using your energy for your own needs. Your meter will move accordingly, banking credits when energy is produced and spending credits when energy is needed.

For example, let's say you manage an affordable housing development, and you have installed a solar system that produces 100 kilowatt hours (kWh) of electricity between 12 pm and 1 pm. However, during the day there is low electricity consumption, because many of the residents are at work, at school, etc. during that time, so only 50 kWh is used during that time period. The rest of the 50 kWh is sent to the grid (usually to buildings in the immediate vicinity), and you receive a full credit to consume 50 kWh later that evening, when there is more demand on your site for electricity. Your resulting electric bill from the utility will be the "net" total of electricity that you use. (This policy can be a bit wonky: read [here](#) for a helpful explanation from the Solar Energy Industries Association).

### **Will I still be connected to the grid?**

Yes. While it is certainly possible to use solar to get completely off the grid, the more common approach is to integrate solar into your normal electricity consumption, thereby offsetting as much of your fossil fuel based energy with clean energy as possible. The interconnection process allows any solar installation that you install to

be “tied in” to your local electric grid and utility, ensuring that you will have continuous access to electricity exactly when you need it. (Don’t worry, we handle that interconnection process).

### **What is virtual net metering?**

Virtual net metering is a regulation or legislation that allows users to benefit from off site solar facilities without being physically interconnected at the meter, also called “community solar.” In states or within utilities that have virtual net metering available, solar generated is credited to a utility account virtually, allowing renters or other consumers with unviable land or roofs to still receive the financial benefits of clean energy production. Virtual net-metering policies vary widely by state and utility. Washington, D.C. has a robust virtual net metering policy, and its utility, PEPCO, has community solar interconnection processes. In Ohio, however, customers in investor-owned utility areas (e.g., AEP) don’t have this option. However, customers of municipal utilities (Cleveland Public Power) and rural electric cooperatives may have this option. These utilities are regulated differently than companies like AEP, but have to enact specific virtual net-metering options in order to ensure they will be available.

### **What happens when the power goes out?**

Your solar system has sensors that detect the flow of electricity on the grid. It will automatically shut off (and not produce power) if you are connected to the electric grid and the power goes out. This is to protect utility workers who go out to repair utility lines while they are down. Once they have made their repairs, and electricity starts flowing across the grid again, your system will begin producing.

This does mean that when the power goes out, your system will go out, and your building will lose power as well. One alternative is to have a battery back-up, where a battery can have several hours of electric storage available to you that you can draw on during a power outage. For most places in the Midwest, battery storage isn’t quite feasible yet, but will be soon!