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## **A guide to rate information & requirements for the interconnection of a solar distributed generating system**

*The following information is prepared and provided for members considering the installation of a photovoltaic (PV) solar generating system. When the generation output of a renewable energy system is interconnected with a utility's distribution lines, it is referred to as a distributed generation (DG) system.*

*If you are considering another form of DG other than PV, such as wind or biomass, contact St. Croix Electric Cooperative Member Services Manager Mark Johnson at 715-796-7000 for information specific to these power generation sources.*

St. Croix Electric Cooperative is required by federal law to allow qualifying DG systems to interconnect with our distribution system, provided the terms and conditions for interconnection have been completed and approved by the Cooperative. It's important for the installer and/or DG system owner to fully understand the Cooperative's general terms of service and specific requirements for interconnection prior to purchasing a renewable energy system.

### **Information you need to know...**

Owning and installing a solar renewable energy system interconnected with the Cooperative's distribution lines can be a personally satisfying and rewarding project for the owner. The Cooperative wants to help ensure the process is as smooth as possible from start to finish. For this reason, we have published a series of documents for your review.

The agreement and forms are provided on this site and are required for the approval of your DG system (battery storage systems require additional forms, available from SCEC). If you are the project owner, you will need information from the manufacturer/installer to complete these forms. Documents for your project can also be requested by contacting Mark Johnson, Member Services Manager.

- **SCEC Distributed Generation Application Form** – Completing and submitting this form to the Cooperative is the **first** step toward final approval of the owner’s DG system for interconnection. The owner of the DG system – not the installer – must sign the application. Some of the information needed for this Form will need to be supplied by the seller/installer. You will be contacted by the Cooperative if additional information is needed.
- **SCEC Distributed Generation Interconnection Agreement Form** – This is the **second** document needing to be completed. This document specifies the terms and contractual obligations of the Cooperative and the DG system owner.
- **Solar Photovoltaic Supplement** – This document asks for specific information about the DG generator and inverter as well as some of the same information provided on the Application Form. You will be required to complete and submit Form 3 before the DG system is inspected by the Cooperative and commissioned (put in service).
- **Wisconsin Distributed Generation Interconnection Guidelines as Adopted by St. Croix Electric Cooperative** - is technical in nature and describes the requirements for the safe operation of an interconnected DG system as well as the obligation of the utility where the interconnection is occurring.

## **DG Installation & System Operation**

### **Meter Socket**

Interconnecting your solar DG system to the grid begins at your meter socket. The electric system at most homes uses a 200-amp service entrance and similarly rated meter socket. The meter socket is owned by the homeowner. We require the meter socket at the point of interconnection with a DG system to be a 320-amp rated socket. This socket is needed for the safe interconnection of the DG wiring into the grid, ahead of the premise’s existing meter. The minimum capacity socket to accommodate this interconnection is rated at 320 amps and costs approximately \$475. This socket can be purchased from the Cooperative. The expense to replace the existing socket is the members. This work needs to be completed by a licensed electrician,

also hired by the member. At no cost to the member, the Cooperative will make a same day disconnect and reconnect of the power so the meter socket can be safely replaced.

### **Meters & Net Energy Billing**

The Cooperative uses a two-meter system: a production meter and a purchase meter for net energy billing. The purchase meter will be the existing meter at the premises. All the energy consumed at this location will be metered and purchased from the Cooperative. The production meter is measuring the output of the PV system before the energy is put into the grid via the top-side meter socket connection.

Net energy billing credits the member's kWh production each billing cycle against their kWh purchases. A member's kWh production in any billing period in excess of their purchases is credited at the avoided energy cost average rate. This rate changes monthly and reflects the average of the solar weighted hourly market rate for energy. In addition, the excess energy production in the months of June, July and August are paid a premium called an avoided cost capacity credit.

The Cooperative has a daily fixed charge of \$1.15 per day per electric account. This charge recovers a majority – but not all – of the Cooperative's fixed costs to have service available whether or not a member purchases any electricity during the billing period. A daily fixed charge of 13 cents per day is applied to additional meters at the member account. Because the Cooperative's daily fixed charge is below the actual cost of service, the additional revenue needed to operate the Cooperative is collected in the energy kWh charge. This amount is currently 2 cents per kWh.

When members offset their power purchases with net energy generation, the Cooperative's revenue decreases by 2 cents for every kWh the member self generates equal to their energy use. To help ensure any subsidization is minimized between members who don't operate renewable energy systems and members who do, a 2-cent per kWh grid charge is applied. The following are examples of the current rates and charges including the grid charge.

**Scenario I:** Member generates/produces 500 kWh in a winter billing period. In the same billing period, the member purchased/consumed only 300 kWh. This scenario assumes an avoided cost energy rate credit of 5 cents per kWh.

Daily Fixed Charge – <b>purchase meter</b>	30 days	X	\$1.15	\$34.50
Energy consumption/purchase meter	300 kWh	X	9.8¢	29.40
Daily Fixed Charge – <b>production meter</b>	30 days	X	13¢	3.90
Energy generation/production meter	300 kWh	@	9.8¢	(29.40) credit
Excess energy production/avoided cost energy rate	200 kWh	@	5¢	(6.60) credit
Grid Charge for kWh produced/used	300 kWh	X	2¢	<u>6.00</u>
			<b>Total Billed</b>	\$34.40

**Scenario II:** Member generates/produces 300 kWh in a winter billing period. In the same billing period, the member purchased/consumed 500 kWh.

Daily Fixed Charge – <b>purchase meter</b>	30 days	X	\$1.15	\$34.50
Energy consumption/purchase meter	500 kWh	X	9.8¢	49.00
Daily Fixed Charge – <b>production meter</b>	30 days	X	13¢	3.90
Energy generation/production meter	300 kWh	@	9.8¢	(29.40) credit
Excess kWh production/avoided cost energy rate	000 kWh	@	5¢	( 0 ) credit
Grid Charge for kWh produced/used	300 kWh	X	2¢	<u>6.00</u>
			<b>Total Billed</b>	\$64.00

**Scenario III:** The same DG energy production and kWh purchases as Scenario I, but occurring during the months of June, July or August when the avoided cost capacity credit per policy 308.2 is earned (5.5¢ per kWh / this amount subject to change annually) and the retail rate for power increases to 11.2¢ per kWh.

Daily Fixed Charge – <b>purchase meter</b>	30 days	X	\$1.15	\$34.50
Energy consumption/purchase meter	300 kWh	X	11.2¢	33.60
Daily Fixed Charge – <b>production meter</b>	30 days	X	13¢	3.90
Energy generation/production meter	300 kWh	@	11.2¢	(33.60) credit
Excess energy production/avoided cost energy rate	200 kWh	@	5¢	(10.0) credit
Excess energy production/avoided capacity	200 kWh	@	5.5¢	(11.0) credit
Grid Charge for kWh produced/used	300 kWh	X	2¢	<u>6.00</u>
			<b>Total Billed</b>	\$23.40

These calculations do not apply to members with bi-directional meters and energy storage batteries.