



# **Distributed Generation (DG) Interconnection Requirements**

## Member Requirements

Cooperative members may be interested in installing their own electric power generation equipment. The term “generator” is a generic term used to represent a variety of self-generating or renewable energy technologies including but not limited to solar, wind, fuel cell, small power generators and battery storage. “Distributed Generation” refers to generation sources of electric energy interconnected to the company’s distribution system.

For members who are interested in interconnecting their power generation equipment with the Cooperative’s electric distribution system, the Cooperative’s staff is available to work with them to ensure their generation equipment is installed in a proper and safe manner and in accordance with all applicable codes, standards, regulations, laws, and insurance requirements. Members may also need to coordinate the installation, inspection, and approval of their system installation with the local code inspection authority.

Attached is information and guidelines to assist our members in the planning, installation, and operation of distributed generation systems. If a member wishes to connect a Qualifying Facility (QF), Western will assist the member in working with Sunflower Electric Power Corporation regarding interconnection of their generation equipment with Western’s system and facilities.

The application and approval process are as follows:

1. Review the attached *Member Requirements for Installation and Interconnection of Distributed Generation Systems*.
2. Complete the appropriate parts of the *Application for Operation of Member-Owned Distributed Generation Systems* and submit the completed application to Western.
3. Once the application has been approved by Western, complete the *Interconnection Agreement*, and submit it to Western.
4. Western will work with the member to determine the appropriate tariff.
5. Western will notify you once your Interconnection Agreement has been approved.
6. Western will inspect your installation prior to authorizing you to interconnect to Western’s distribution system.
7. You will also be required to provide proof of liability insurance prior to interconnecting your generating system.

Our staff will work closely with you to assure the interconnection process goes as smoothly as possible. Questions regarding the application process should be addressed to the Member Services Manager, Western Cooperative Electric, PO Box 278, WaKeeney, Kansas 67672. The Manager can be reached by phone at 785-743-5561 or 800-456-6720.

## Western Cooperative Electric

### Member Requirements for Installation and Interconnection of Distributed Generation Systems

Western is available to assist members who are interested in installing and interconnecting their own distributed generation equipment with the Cooperative's electric distribution facilities. The following are requirements for the equipment and installation necessary to assure the compatible operation of distributed generation systems to be operated in parallel with Western's distribution system. Depending on size and type of operation, power generation systems may be required to meet the interconnection requirements of Western's wholesale power supplier, Sunflower Electric Power Corporation. A study may be required. Western will assist members in making the appropriate contacts with Sunflower and work with them throughout the process.

#### A. Application Process for Distributed Generation Systems

1. Complete Parts 1 and 2 of *Application for Operation of Member-Owned Distributed Generation Systems*.
2. Western will examine the application and planned installation to determine the appropriate rate and assure the safety of the distribution system and facilities, members and employees. Western may disapprove the application and planned installation in whole, or in part, to the extent the planned installation does not adequately assure the safety of Western's distribution system, facilities, members and employees or causes Western to violate existing agreements with its wholesale supplier.
3. Upon approval of the application, the Member will be required to sign an *Interconnection Agreement* per item B. If after approval of the application any changes are made to the planned installation, the Member shall be required to provide Western with documentation showing the proposed changes and obtain re- approval.

#### B. Interconnection Agreement

The attached *Interconnection Agreement* must be completed and executed by the Member and submitted to Western for approval prior to installation.

#### C. Safety and Equipment Requirements

1. The Distributed Generation System installation must comply with the requirements of the current National Electric Code (NEC), National Electric Safety Code (NESC), IEEE 1547 Standard, other applicable National, State, and local codes and ordinances, and Western's Rules & Regulations.

2. The Member shall furnish and install at the Distributed Generation System's interface with Western's facilities a manually operated safety disconnect device with load break capability. This device shall have a visible open circuit clearance, shall be accessible to Western employees at all times.
3. The Member's installation shall include protection that is compatible and coordinates with Western's system protection so that faults on the Member's system do not cause outages or disturbances to Western's system.
4. The Member's installation shall include protection capable of sensing any type of fault or outage on the interconnection and must isolate the Member's power system from Western's system and other members.
5. The Member is responsible for the protection of their Distributed Generation System from faults and other disturbances on Western's system.
6. The installation must include an inverter that meets the requirements of IEEE 929, "Recommended Practice for Utility Interface of Photovoltaic (PV) Systems" and Underwriters Laboratories (UL) 1741, "Standard for Static Inverters and Charge controllers for Use in Photovoltaic Power Systems." Adherence to these standards ensures:
  - a. Fixed voltage and frequency trip settings.
  - b. An integral anti-islanding scheme.
  - c. Total harmonic current distortion less than 5% of the fundamental frequency current at rated inverter output.

#### D. Parallel Operation and Inspection

1. The Member shall be responsible for operating the Distributed Generation System and all associated facilities except as hereafter specified. The Member shall maintain the Distributed Generation System in synchronization with the Cooperative's distribution system.
2. The Member shall be responsible for the installation, maintenance, and operation of all generating equipment and facilities installed at the site. Such equipment and facilities shall include but are not limited to: (a) protective equipment between the distributed system and the Cooperative's system, (b) all necessary control equipment to synchronize frequency and voltage between the two systems. The Distributed Generation System's voltage at the point of interconnection will be the same as the Cooperative's system voltage.
3. If Western is required to construct facilities different than otherwise would be required to permit interconnection, the Member shall pay such additional cost of facilities.
4. The Member shall designate an "Operator in Charge" for the purpose of contact and communication with Western regarding the operation of the Distributed Generation System.

5. Western will have the continuing right to inspect and approve the Member's Distributed Generation System, and to request and witness any tests necessary to determine that such facilities are installed and operating properly; however, Western will have no obligation to inspect or approve the Distributed Generation System, or to request or witness tests, and Western will not in any manner be responsible for operation of the Distributed Generation System.
6. Western reserves the right to require a system test if the Member's Distributed Generation System installation causes a disturbance which adversely affects service to Western's members. Western will require that the Distributed Generation System be isolated while any corrective action is taken by the Member.
7. Western reserves the right to curtail purchases from the Distributed Generation System when Western has a system emergency and purchases would or could contribute to such emergency.

#### E. Indemnification and Liability Insurance Requirements

1. The Member assumes all responsibility for the electric service upon Member's premises at and from the point of any delivery or flow of electricity from Western, and for the wires and equipment used in connection therewith; and Member will protect and save Western harmless from all claims for injury or damage to persons or property, including but not limited to property of Member, occurring on or about Member's premises or at and from the point of delivery or flow of electricity from Western, occasioned by such electricity or said wires and equipment, except where said injury or damage is proven to have been caused solely by the negligence of Western.
2. The Member will (a) pay the Cooperative for all damages to Western's equipment, facilities, or distribution system, and (b) save and hold Western harmless from all claims, demands and liabilities of every kind and nature for injury or damage to, or death of, persons and/or property of others, including costs and expenses of defending against the same, arising in any manner in connection with Member's Distributed Generation System or the operation thereof.
3. The Member, at their own expense, shall secure and maintain in effect while interconnected to Western's distribution system liability insurance with a combined single limit for bodily injury and property damage of not less than \$100,000.
4. A Certificate of Insurance evidencing the requisite coverage shall be provided to Western prior to interconnecting to Western's distribution system. Western shall be permitted to periodically obtain proof of current insurance coverage from the Member in order to verify proper liability insurance coverage. The Member will not be allowed to commence or continue interconnected operations unless evidence is provided that satisfactory insurance coverage is in effect.

## F. Billing Rates and Procedures

1. Western will utilize a net-metering or a parallel generation billing tariff for all Distributed Generation Systems who interconnect with Western's system. Western will provide and maintain all metering equipment necessary to implement net-billing. The billing process will be determined by the appropriate tariff.