



## DISTRIBUTIVE GENERATION MANUAL

### GENERAL

In order to receive service from the Cooperative, a customer must join or become a “member” of the cooperative. Throughout this manual, customers will be referred to as Members. For more information about the cooperative membership application process, including any applicable membership fees or deposits, see the Cooperative to request new member information.

It is the intent of the Cooperative to allow Members to install Distributed Generation (DG), if so desired, provided the Member’s DG facility does not adversely affect the Cooperative. The Member must conduct his/her own analysis to determine the economic benefit of DG operation.

DG operation that is not connected to the Cooperative distribution system in any way is known as “stand-alone” or “isolated” DG. The Member may operate a DG installation in stand-alone or isolated fashion as long as it does not adversely affect the Cooperative distribution system. A DG operation connected in any way to the Cooperative distribution system shall be considered as a “parallel” operation. For purposes of this manual, a DG operation is considered as “parallel” anytime it is connected to the Cooperative distribution system in any way, even if it is not the intention of the Member to export power to the Cooperative or its Power Supplier. All provisions of this policy shall apply to parallel operation of DG facilities as so defined.

This manual does not cover merchant power purchase agreements from customers intending to sell power into the distribution or transmission grid without taking service. Service to customers of this type will be negotiated by the Cooperative and its power supplier on a case-by-case basis.

In all cases where the terms “avoided energy cost” or “avoided capacity cost” or “avoided power cost” shall be used, the terms shall apply to the Cooperative’s power supplier’s avoided cost and not to the Cooperative’s avoided cost.

This manual is not a complete description or listing of all the laws, ordinances, rules and regulations the Members must or should follow, nor is it an installation or safety manual. The Member requesting DG service must follow, in addition to all provisions of the **Manual, the Cooperative’s Terms and Conditions of Service and Tariffs for Electric Service on file at the Oklahoma Corporation Commission (OCC), the Policies and Procedures of the Cooperative’s power supplier where applicable, the current IEEE 1547 Standard Guide for Distributed Generation Interconnection (a copy is on file at the Cooperative for inspection along with information so the Member may obtain his/her own copy), and any other applicable governmental and regulatory laws, rules, ordinances and/or requirements.** All legal, technical, financial, etc. requirements in the following sections of this manual must be met prior to interconnection.

A Member may serve all load behind the meter at the location serving the DG installation but will not be allowed to serve multiple meters, multiple consuming facilities or multiple Members

with a single DG installation or under a single DG application without prior approval by the Cooperative.

DG facilities larger than 3 MW are not covered by this manual and will be considered by the Cooperative and its Power Supplier on a case-by-case basis.

**A. DETERMINE THE CATEGORY OF DISTRIBUTED GENERATION FACILITY**

1) Connection Level Category

- a) Connected to the Cooperative's system: The Member requests and/or the Member's DG facility requires connection to the Cooperative's system. All provisions of this policy cover this category.
- b) Connected to the Cooperative's Power Supplier's system: The Member requests and/or the Member's DG facility require connection to the Cooperative's Power Supplier's system. This policy does NOT cover this category. The Member should contact the Cooperative's Power Supplier directly as follows: **WFEC % Marketing Department, P.O. Box 429, Anadarko, OK 73005.**
- c) The intent is to assist with DG at primary residences and/or commercial accounts only. Most non-residential or unoccupied farm accounts are not normally suited with adequate distribution service to accommodate any DG unit; however, each location will be reviewed on an individual basis using an engineering study paid for by the Member. Upgrades or line improvement to accommodate any DG will be paid for by the Member prior to interconnection.

**B. Power Export Category**

- a) Parallel – no power export: The member operates a system connected in any way to the Cooperative distribution system but with no intention to export power to the Cooperative and/or its Power Supplier.
- b) Parallel – power generated to be both consumed and exported: The member operates a system connected in any way to the Cooperative distribution system designed primarily to serve the member's own load but with the intention to export excess power to the Cooperative and/or its Power Supplier.
- c) Parallel – power generated to be exported only: The member operates a system connected in any way to the Cooperative distribution system designed primarily with the intention to export power to the Cooperative and/or its Power Supplier.

**C. Qualifying or Non-Qualifying Category**

**D.** Qualifying Facilities (QF) are defined by the Public Utility Regulatory Policies Act of 1978 (PURPA). Refer to CFR Title 26, Volume 4, Sec. 292.204. Qualifying Facilities will always be given consideration by the Cooperative for connection.

**E.** The distinction between QF and Non-Qualifying Facilities (NQF) mainly deals with fuel use.

- (1) In general, a QF must have as its primary energy source biomass, waste, renewable resources, geothermal resources or any combination. Energy storage technology will be considered as a QF.
- (2) Other DG will be considered NQF by the Cooperative.
- c) The Cooperative and/or its Power Supplier will provide interconnection to DG Members, subject to the provisions of this policy and other applicable rules and regulations.
- d) The Cooperative and/or its Power Supplier will negotiate a power purchase agreement with QF DG members, subject to the provisions of this policy and other applicable rules and regulations.
- e) The Cooperative and/or its Power Supplier may negotiate a power purchase agreement with Non-QF DG member

4) Size Category

a) Facilities with maximum rated capacity of 300 kW and smaller:

- (1) Facilities  $\leq$  300 kW of maximum rated capacity will be placed in this size category if the installed capacity of the distributed generation resource is less than or equal to 125% of the Members non-coincident peak load prior to installation of the solar resource.

*Note: Where facilities are  $\leq$  300 kW but where the installed capacity of the distributed generation resource is greater than 125% of the Member's Non-Coincident peak load, the facility shall be treated as greater than 300 kW for purposes of all provisions of this manual, including sales and purchases.*

*Note: If requested by the Member, facilities less than or equal to 300 kW that qualify for inclusion in this category will be considered as belonging to the > 300 kW category for purposes of all provisions of this manual, including sales and purchases.*

b) Facilities above 300 kW but less than 3 MW:

- (1) Facilities > 300 kW and facilities not meeting the requirements listed above will be considered as being small power producers and shall not be eligible for net metering.
- (2) At the request of the Member, facilities  $\leq$  300 kW will be considered as being > 300 kW for all provisions of this manual, including sales and purchases.
- (3) Facilities 300 kW and smaller where the installed capacity of the distributed generation resource is greater than 125% of the Member's noncoincident peak load shall be treated as greater than 300 kW for purposes of all provisions of this manual, including sales and purchases.
- c) Facilities above 3 MW of connected generation will involve individual analysis on a case-by-case basis and are not considered under this policy.

**B. MEMBER'S INITIAL REQUIREMENTS**

1) Notification

- a) The Member must meet all the Cooperative's membership and service requirements in addition to the requirements in this manual. ElectPay or "prepaid" accounts are not eligible.
- b) Anyone owning and/or operating a Parallel Distributed Generation (DG) facility or facilities served by the Cooperative must notify the cooperative of the existence, location and category of the facility.

2) Service Request

- a) QF will always be considered for connection by the Cooperative. NQF may be considered for connection at the sole discretion of the Cooperative and its Power Supplier.
- b) Facilities under 300 kW in size and of standard manufacture and design may submit the Application Short Form. All other facilities must submit the Application Long Form.
- c) A separate form must be submitted for each facility and each location.

3) Submit a DG Plan

- d) Member shall submit a plan detailing the electrical design, interconnection requirements, size, and operational plans. Either at the time of submission or at any time during the review process, the Cooperative and/or its Power Supplier may require additional information and/or may require the plans to be prepared by a registered Professional Engineer in the state of Oklahoma.
- e) In the case of parallel facilities with no intention to export power to the Cooperative and/or its Power Supplier that are of standard design and intended entirely as emergency or back-up power supply for the facility, the Cooperative may, at its sole discretion, waive the application fee.
- f) Prior to review of the application and plan by the Cooperative and its Power Supplier, the Member shall pay an application fee as indicated below. A separate fee must be submitted for each facility and location.

| DG Size<br>(Connected Load) | Application Fee               | Additional<br>Engineering Fee |
|-----------------------------|-------------------------------|-------------------------------|
| <300 kW                     | None                          | As Required                   |
| 300 kW to 3mW               | \$500                         | As Required                   |
| > 3 mW                      | Not covered by this<br>manual | Not covered by this<br>manual |

**C. COOPERATIVE AND POWER SUPPLIER REVIEW PROCESS**

1) Plan Review Process

- CI.** The Cooperative and/or its Power Supplier will review the documents, plans, specifications, and other information provided and will return an interconnection analysis to the Member within 60 days of receipt of final plans and specifications.
- CII.** Technical review will be consistent with guidelines established by the most recent **IEEE Standard 1547 Guide for Distributed Generation Interconnection**.
- CIII.** If corrections or changes to the plans, specifications and other information are to be made by the Member, the 60-day period may be reinitialized when such changes or corrections are provided to the Cooperative and its Power Supplier. In addition, any changes to the site or project requiring new analysis by the Cooperative may require additional cost and a new plan. The cost will be determined by the Cooperative.
- CIV.** Any review or acceptance of such plans, specifications and other information by the Cooperative and/or its Power Supplier shall not impose any liability on the Cooperative and/or

its Power Supplier and does not guarantee the adequacy of the Member's equipment to perform its intended function. The Cooperative and its Power Supplier disclaims any expertise or special knowledge relating to the design or performance of member-owned distributed generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability, or reliability of such DG installations.

e) In the event it is necessary at the time of initial interconnection or at some future time for the Cooperative and/or its Power Supplier to modify electric delivery systems in order to serve the Member's DG facilities and/or purchase or continue to purchase the Member's output, or because the quality of the power provided by the Member's DG adversely affects the Cooperative and/or its Power Supplier's delivery system, the Member will reimburse the Cooperative and/or its Power Supplier for all costs of modifications required for the interconnection of the Member's DG facilities.

#### **D. SALES TO AND PURCHASES FROM A DG INSTALLATION**

##### 1) For all facilities where the Member desires to export power

- a) All facilities will be connected under one of the Cooperative's existing rate tariffs.
- b) Sales to a Member shall be consistent with the applicable retail rates schedule established by the Cooperative.
- c) All applicable rates and charges included in the Cooperative rate tariffs shall apply to a DG facility in addition to any special charges listed in the tariff.
- d) The Member shall pay all rates and charges so listed.
- e) Neither the Cooperative nor its Power Supplier is under any obligation to purchase power from a Non-QF.
- f) In all cases where the terms "avoided energy cost" or "avoided capacity cost" or "avoided power cost" shall be used, the terms shall apply to the Cooperative's power supplier's cost and not to the Cooperative's cost.

##### 2) For facilities $\leq 300$ kW, where the installed capacity of the distributed generation resource is not greater than 125% of the Member's NCP load, and where the Member desires to export power

- a) For power produced in excess of on-site requirements, the Member will be compensated by the retail purchase meter running in reverse (Net Metering). The Cooperative shall bill the Member for the excess energy supplied by the Cooperative over and above the energy supplied by the Member during each billing period according to the Cooperative's applicable retail rate schedule.
- b) When the energy supplied by the Member exceeds the energy supplied by the Cooperative during a billing period, the monthly charge and/or minimum bill of the retail rate schedule shall be billed by the Cooperative in addition to the monthly metering charge, and the excess energy shall be purchased by the Cooperative on behalf of the Cooperative's Power Supplier at a rate equal to the avoided energy cost of the Cooperative's Power Supplier. Payment for excess energy provided by the Member to the Cooperative shall be shown as a credit on the Member's monthly bill.
- c) The Member shall sign an approved agreement for interconnection service with the Cooperative.
- d) In addition to all other charges, the Cooperative may bill the member for any additional facilities charges as determined in the agreement for service or tariff.

e) The Cooperative and/or its Power Supplier may, at its sole discretion, purchase power from a Non-QF under the terms of this section.

3) For facilities > 300 kW and < 3 MW where the Member desires to export power (small power producer) or for facilities ≤ 300 kW where the member requests that his/her facility be treated as > 300 kW, or for facilities ≤ 300 kW where the installed capacity of the distributed generation resource is greater than 125% of the Member's NCP load:

a) No net metering shall be used: The type of metering to be used shall be specified at the sole discretion of the Cooperative. The metering shall provide data so the Cooperative can determine each billing period the energy supplied to the Member by the Cooperative and the energy supplied to the Cooperative's Power Supplier by the Member.

b) A meter shall be used which can be remotely read by the Cooperative and/or its Power Supplier through an approved communications link. If the site selected makes the installation of an approved communications link not feasible, the meter shall be read monthly by Cooperative personnel and the Member shall be billed for the additional cost of reading the meter.

c) The Cooperative shall bill the Member for the full energy used by the Member during each billing period according to the Cooperative's applicable retail rate schedule.

d) In addition to all other charges, the Cooperative may add an additional monthly customer charge for DG Members to recover any additional billing, meter reading and/or customer service costs.

e) Excess energy provided by the Member shall be purchased by the Cooperative's Power Supplier at a rate equal to the Power Supplier's avoided energy cost.

f) The Member shall sign an approved agreement for Interconnection with the Cooperative and a separate agreement for Power Purchase with the Cooperative's Power Supplier as required.

g) In addition to all other charges, the Cooperative may bill the member for any additional facilities charges as determined in the contract for service.

h) The Cooperative and/or its Power Supplier may, at their sole discretion, purchase power from a Non-QF under the terms of this section.

## **E. MEMBER'S RESPONSIBILITY PRIOR TO OPERATION**

1) Line Extension and Modifications to Cooperative Facilities

a) As a part of the Interconnection analysis performed by the Cooperative and its Power Supplier, the Member will be provided with an estimate of any line extension or other cost to be incurred in providing electric delivery service to the Member's DG facility.

b) Without regard to the Cooperative's line extension policy, the Member shall pay in advance the full cost of the construction of any transmission, substation, distribution, transformation, metering, protective, or other facilities or equipment which is required and installed by the Cooperative and/or its Power Supplier to serve the Member's DG facility.

c) In the event it is necessary for the Cooperative and/or its Power Supplier to modify electric delivery systems in order to serve the Member's DG facilities and/or purchase or continue to purchase the Member's output, or because the quality of the power provided by the Member's DG adversely affects the Cooperative and/or its Power Supplier's delivery system, the Member will reimburse the Cooperative and/or its Power Supplier for all costs of modifications required for the interconnection of the Member's DG facilities.

d) In the event the Cooperative, at any time in the future, changes the primary voltage of distribution facilities serving the DG installation such that metering equipment, transformers and/or any Member-owned equipment must be changed, the full cost of the change will be borne by the Member.

e) In all cases, the Member shall pay the full cost of the installation of a visible load break disconnect switch by and to the sole specification of the Cooperative. The switch will be readily accessible to Cooperative personnel and of a type that can be secured in an open position by a Cooperative padlock.

## 2) Applicable Regulations

a) The Member shall comply with all applicable tariffs, policies and procedures of the Cooperative and its Power Supplier. (DG tariffs, policies and procedures included.)

b) The Member shall comply with all applicable laws, ordinances rules and regulations of any federal, state, county, and/or local authority, including, but not limited to: the National Electric Code and the most recent *IEEE Standard 1547 Guide for Distributed Generation Interconnection*, applicable ANSI standards, including ANSI C84.1 Range A relating to installation, safety, easements, code restrictions, operation and other matters.

c) The Member shall be solely responsible for compliance with all applicable environmental laws, requirements and regulations, including but not limited to reporting and permits.

## 3) Liability Insurance

The Cooperative recommends that the Member obtain and maintain adequate liability insurance.

## 4) Contracts / Agreements

a) Interconnection Agreement

(1) The Member will sign and deliver an interconnection Agreement to the Cooperative and, where required, with the Cooperative's Power Supplier.

(2) The Cooperative will provide the required contract form with these guidelines.

## 5) Initial Interconnection

a) Upon satisfactory completion of the review process and execution of required agreements as outlined in this policy, the cooperative will begin interconnection of DG facilities. Interconnection will be completed as soon as practical after completion of the review process and execution of the necessary contracts. After completion of interconnection requirements and prior to initiation of service, the Cooperative will conduct a final inspection of the facilities and interconnection to the Cooperative's system. Upon satisfactory final inspection, the Cooperative will initiate service to the DG member.

b) The Cooperative's review process and final inspection is intended as a means to safeguard the Cooperative's facilities and personnel. Any review by the Cooperative and/or its Power Supplier shall not impose any liability on the Cooperative and/or its Power Supplier and does not guarantee the adequacy of the Member's equipment to perform its intended function. The Cooperative and its Power Supplier disclaims any expertise or special knowledge relating to the design or performance of Member-owned distributed generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability, or reliability of such DG installations.

## **F. REFUSAL TO INTERCONNECT SERVICE OR DISCONNECTION OF INTERCONNECTION SERVICE**

The Cooperative may, at its sole discretion, prevent the interconnection or disconnect the interconnection of DG installations due to reasons such as safety concerns, reliability issues, power quality issues, breach of interconnection contract or any other reasonable issue. This disconnection may be without prior notice where an unsafe situation is found by the Cooperative.

## **G. OPERATION OF PARALLEL FACILITY**

### **1) Purpose**

The purpose of this section is to outline the Cooperative's DG Operational requirements and is not intended to be a complete listing of all operational, regulatory, safety and other requirements.

### **2) Ownership of facilities**

- a) The Member shall own and be solely responsible for all expense, installation, maintenance and operation of all facilities, including all power generating facilities, at and beyond the point of common coupling as defined by the *IEEE* except as indicated in item 2), b) below.
- b) At its sole discretion, the Cooperative may locate cooperative owned metering equipment and transformers past the point of common coupling.

### **3) Self-Protection of DG Facilities**

- a) The Member will furnish, install, operate and maintain in good order and repair all equipment necessary for the safe operation of the power generating installation in parallel with the Cooperative electric distribution system.
- b) Equipment will have capability to both establish and maintain synchronism with the Cooperative system and to automatically disconnect and isolate the DG installation from the Cooperative system.
- c) The Member's DG installation will be designed, installed and maintained to be self-protected from normal and abnormal conditions on the Cooperative system including, but not limited to, overvoltage, under-voltage, over-current, frequency deviation, and faults. Self protection will be compatible with all applicable Cooperative protection arrangements and operating policies.
- d) Additional protective devices and/or functions may be required by the Cooperative when, in the sole judgment of the Cooperative, the particular DG installation and/or the Cooperative system characteristics so warrant.

### **4) Quality of service**

- a) Member's DG installation will generate power at the nominal voltage of the Cooperative electrical distribution system at the Member's delivery point as defined by ANSI C84.1 Range A.
- b) Member's DG installation will generate power at a frequency within the tolerances as defined by IEEE 1547.
- c) Member's DG installation shall produce power at a minimum power factor of at least 95% or shall use power factor correction capacitors to ensure at least a 95% power factor.



d) The overall quality of the power provided by the Member's DG installation including, but not limited to, the effects of harmonic distortion, voltage regulation, voltage flicker, switching surges and power factor, will be such that the Cooperative system is not adversely affected in any manner.

e) In the event that the adverse effects are caused in whole or in part by the Member's DG installation, the Member will correct the cause of such effects, reimburse the Cooperative for required correction, or be disconnected from the Cooperative system.

#### 5) Safety Disconnect

a) The Member's facilities shall be designed to automatically disconnect from the Cooperative's lines any time, line power shall no longer be detected by means of a visible disconnect switch.

b) At its sole discretion, the Cooperative may require customers to install a visible load break disconnect at the Member's expense and to the Cooperative's specifications.

c) The disconnect switch will be located so as to be readily accessible to Cooperative personnel in a location acceptable to both the Member and Cooperative.

d) The disconnect switch shall be a type that can be secured in an open position by a Cooperative lock. If the Cooperative has locked the disconnect open, the Member shall not operate and/or close the disconnect switch.

e) The Cooperative shall have the right to lock the switch open when, in the judgment of the Cooperative:

(1) It is necessary to maintain safe electrical operating and/or maintenance conditions.

(2) The Member's DG adversely affects the Cooperative system, or

(3) There is a system emergency or other abnormal operating condition warranting disconnection.

f) The Cooperative reserves the right to operate the disconnect switch for the protection of the Cooperative system even if it affects the Member's DG installation. In the event the Cooperative opens and/or closes the disconnection switch:

(1) The Cooperative shall not be responsible for energization or restoration of parallel operation of the DG installation.

(2) The Cooperative will make reasonable efforts to notify the Member.

g) The Member will not bypass the disconnect switch at any time for any reason.

h) Signage shall be placed by the Cooperative at the location of the disconnect switch indicating the purpose of the switch along with contact names and numbers of both the Member and the Cooperative.

i) Members with DG facilities as defined in this policy which are solely for the purpose of emergency backup or peak shaving without intent to export power shall not operate their DG facilities unless visibly disconnected from the Cooperative system.

j) Should the Cooperative lose power from its system serving the Member's DG facilities for any reason, Members with DG facilities which are intended to export power shall not operate their DG facilities unless disconnected from the Cooperative system.

#### 6) Access

a) Persons authorized by the Cooperative will have the right to enter the Member's property for purposes of testing, operating the disconnect switch, reading or testing the metering

equipment or other DG and/or service requirement. Such entry onto the Member's property may be without notice.

b) If the Member erects or maintains locked gates or other barriers, the Member will furnish the Cooperative with convenient means to circumvent the barrier for full access for the above-mentioned reasons.

7) Liability for Injury and Damages

a) The Member assumes full responsibility for electric energy furnished at and past the point of interconnection and shall indemnify the Cooperative against and hold the Cooperative harmless from all claims for both injuries to persons, including death resulting therefrom, and damages to property occurring upon the premises owned or operated by Member arising from electric power and energy delivered by the Cooperative or in any way arising directly or indirectly from the Member's DG installation except:

(1) When the negligence of the Cooperative or its agent or agents was the sole proximate cause of injuries, including death therefrom, to Member or to employees of Member or in the case of a residential Member, to all people of the household, and

(2) As to all other injuries and damages, to the extent that injuries or damages are proximately caused by or result in whole or in part from:

(a) Any negligence of the Cooperative or its agent or agents independent of and unrelated to the maintenance of Cooperative facilities or any condition on Member's premises, or

(b) The breach by the Cooperative of any provision of any contract regarding purchase and/or sale of electrical energy or service between the Member and the Cooperative.

b) The Cooperative shall not be liable for either direct or consequential damages resulting from failures, interruptions, or voltage and waveform fluctuations occasioned by causes reasonable beyond the control of the Cooperative including, but not limited to, acts of God or public enemy, sabotage and/or vandalism, accidents, fire, explosion, labor troubles, strikes, order of any court or judge granted in any bona fide adverse legal proceeding or action, or any order of any commission, tribunal or governmental authority having jurisdiction. For claims resulting from failures, interruptions, or voltage and waveform fluctuations occasioned in whole or in part by the negligence of the Cooperative or its agent or agents, the Cooperative shall be liable only for that portion of the damages arising from personal injury, death of persons, or costs of necessary repairs to or reasonable replacement of electrical equipment proximately caused by the negligent acts of the Cooperative or its agent or agents. The Cooperative shall not be liable in any event for consequential damages.

8) Metering/Monitoring

The Cooperative shall specify, install and own all metering equipment.

a) Facilities  $\leq$  300 kW: The facility will be net metered by installing a meter which measures the flow of energy in each direction

b) Facilities  $>$  300 kW but  $<$  3 MW:

(1) Power transfer at the point of interconnection will be measured by metering equipment as installed and specified at the sole discretion of the Cooperative and/or its Power Supplier.

(2) There shall be no net metering.

c) Meter testing shall follow the Cooperative's standard policy on metering testing and accuracy.

d) At its sole discretion, the Cooperative may meter the facility at primary and/or secondary level.

9) Notice of Change in Installation

a) The Member will notify the Cooperative in writing thirty (30) days in advance of making any change affecting the characteristics, performance, or protection of the DG installation.

b) If any modification undertaken by the Member will create or has created conditions which may be unsafe or adversely affect the Cooperative system, the Member shall immediately correct such conditions or be subject to immediate disconnection from the Cooperative system.

c) Any change in the operating characteristics of the DG installation including, but not limited to, size of generator, total facility capacity, nature of facility, fuel source, site change, hours of operation, or type of generator used, will require a new application process, including, but not limited to, application form, application fee, DG plan and DG plan review by the Cooperative and/or its Power Supplier.

10) Disconnection of Service

The Cooperative may, at its sole discretion, discontinue the interconnection of DG installations due to reasons such as safety concerns, reliability issues, power quality issues, breach of interconnection contract or any other reasonable issue.