Bartlett Electric Cooperative, Inc.

Distributed Generation Procedures & Guidelines Manual for Members

December 28, 2023

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DISTRIBUTED GENERATION
PROCEDURES & GUIDELINES MANUAL
FOR MEMBERS

I. GENERAL

In order to receive service from Bartlett Electric Cooperative, Inc., hereinafter referred to as "Cooperative", a Customer must join or become a "Member" of the Cooperative. Throughout this Distributed Generation (DG) Manual, Customers will be referred to as "Members." For more information about the Cooperative membership application process, including any applicable membership fees or deposits, contact the Cooperative to request new member information. Please refer to the DG Tariff (Attachment 1) for definitions of terms used in this DG Manual.

It is the intent of the Cooperative to allow Members to install DG, 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.

A DG facility that is not connected to the Cooperative's system in any way is known as "stand-alone" or "isolated" DG. The Member may operate a DG facility in a stand-alone or isolated fashion as long as such DG facility does not adversely affect the Cooperative's system. A DG facility connected in any way to the Cooperative's system shall be considered as in "parallel." For purposes of this DG Manual, a DG facility is considered operating in "parallel" anytime it is connected to the Cooperative's system in any way, even if the Member does not intend to export power. All provisions of this DG Manual shall apply to parallel operation of DG facilities as so defined. Member shall fully comply with the provisions of this DG Manual, as same may be amended from time to time at the sole discretion of the Cooperative.

This DG Manual is not a complete description or listing of all laws, ordinances, rules and regulations, nor is this DG Manual intended to be an installation or safety manual. **If any part of this DG Manual shall be found to be in conflict with the DG Tariff, the DG Tariff shall control.** The Member requesting to interconnect a DG facility to the Cooperative's system is responsible for and must follow, in addition to all provisions of this DG Manual, the Cooperative's Rules and Regulations and Tariffs for Electric Service, the Cooperative's Line Extension Policy, the Policies and Procedures of the Cooperative's power supplier where applicable, the current NFPA 70 National Electrical Code (NEC), the current IEEE 1547 Standard Guide for Distributed Generation Interconnection, IEEE 519 Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems, and other applicable IEEE standards, applicable ANSI standards, including ANSI C84.1, UL 1741 Standard for Inverters, Converters, and Controllers for use in Independent Power Production Systems, PUC Substantive Rule 25.212 and any other applicable governmental and regulatory laws, rules, ordinances or requirements. All legal, technical, financial, etc. requirements in the following sections of this DG Manual must be met prior to interconnection of the DG facility to the Cooperative's system.

A Member may serve all loads behind the meter at the location serving the DG facility but will not be allowed to serve multiple meters, multiple consuming facilities or multiple Members with a single DG facility or under a single DG application without prior written approval by the Cooperative.

II. 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 require connection to the Cooperative's system. All provisions of this DG Manual cover this category.

b) Connected to the Cooperative's Power Supplier's system (60 kV and higher voltages, 10 MW and above):
The Member requests and/or the Member's DG facility require connection to the Cooperative's Power Supplier's system. This DG Manual does NOT cover this category. The Member should contact the Cooperative's Power Supplier directly as follows: Manager of Communications/Key Accounts, Brazos Electric Cooperative, 1-888-751-6500.

2) Power Export Category

a) Parallel – no power export (typical for small renewable wind or solar ≤ 20 kW)
The Member operates a DG facility connected in any way to the Cooperative system but with no intention to export power.

b) Parallel – power generated to be both consumed and exported
The Member operates a DG facility connected in any way to the Cooperative's system designed primarily to serve the Member's own load but with the intention to export excess power.

c) Parallel – power generated to be exported only
The Member operates a DG facility connected in any way to the Cooperative's system designed primarily with the intention to export power.

3) Size Category

a) Facilities 20 kW and smaller
Facilities ≤ 20 kW of connected generation will be placed in this size category.

III. 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 the DG Manual.

b) Anyone owning or operating a DG facility in parallel with the Cooperative's system must notify the Cooperative of the existence, location and category of the DG facility.

2) Service Request

a) In advance of request for an interconnection, the Member must contact the Cooperative and complete the "Application for Operation of Member Owned Generation" (Attachment 2) and the appropriate "Cooperative Agreement for Interconnection and Parallel Operation of Distributed Generation". Additionally, a $200 DG Application Fee (page 31) must be paid at this time.

b) DG facilities 20 kW and smaller in size and of standard manufacture and design (as so determined by the Cooperative) may submit the Agreement Short Form (Attachment 3).

c) A separate form must be submitted for each facility.

3) Submit a DG Plan

a) As a part of the Application, the Member shall submit a plan detailing the electrical design, interconnection requirements, size, and operational plans for the DG facility (the "DG plan"). Either at the time of submission or at any time during the review process, the Cooperative may require additional information or may require the DG plan to be prepared by a Professional Engineer registered in the state of Texas.

IV. COOPERATIVE AND POWER SUPPLIER REVIEW PROCESS

1) Plan Review Process

a) The Cooperative and its Power Supplier, if requested by the Cooperative, will review the application and accompanying documents, plans, specifications, and other information provided and will return an interconnection analysis to the Member within six (6) weeks of receipt of final plans and specifications and additional information, if any, requested by the Cooperative. The cost will be determined by the Cooperative and shall be paid by the Member.

b) Technical review will be consistent with guidelines established by the most recent ***IEEE Standard 1547 Guide for Distributed Generation Interconnection.*** The Member may be required by the Cooperative to provide proof that their DG Facilities have been tested and certified by applicable IEEE guidelines.

c) If corrections or changes to the plans, specifications and other information are to be made by the Member, the six (6) weeks period may be reinitialized when such changes or corrections are provided to the Cooperative. In addition, any changes to the site or project requiring new analysis by the Cooperative may require additional cost and a new DG plan. The cost will be determined by the Cooperative and shall be paid by the Member.

d) 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 or DG facility to perform its intended function. The Cooperative and its Power Supplier disclaim any expertise or special knowledge relating to the design or performance of DG installations and does not warrant the efficiency, cost-effectiveness, safety, durability, or reliability of such DG installations. Installation and operation of the DG facility shall at all times be at the Member's risk and expense.

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 output of the Member's DG facilities, or because the quality of the power provided by the Member's DG adversely affects the Cooperative's and/or its Power Supplier's delivery system, the Member will be responsible to pay the Cooperative and/or its Power Supplier in advance for all costs of modifications required for the interconnection of the Member's DG facilities.

V. SALES TO AND PURCHASES FROM A DISTRIBUTED GENERATION FACILITY

1) <u>For all DG where the Member desires to export power</u>

a) All DG facilities shall be billed under one of the Cooperative's existing rate tariffs.

b) All sales of electric power and energy by the Cooperative to a Member shall be consistent with the applicable retail rate schedule established by the Cooperative as if there were no DG installation at the Member's premises, including any charges in the Cooperative's DG tariff rider.

c) The Member shall pay all rates and charges so listed in the applicable tariff sections.

d) The Member shall be subject to any market charges related to the Member's DG facility, including but not limited to scheduling, dispatching and energy imbalance.

2) <u>For DG ≤ 20 kW where the Member desires to export power:</u>

a) For power produced in excess of on-site requirements, the Member will be compensated by the Member's kWh generation. The Cooperative shall bill the Member for the energy supplied by the Cooperative during each billing period according to the Cooperative's applicable retail rate schedule.

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

c) The Cooperative shall credit the Member's account on a monthly basis or pay the Member on a mutually agreeable basis for the energy supplied by the Member to the Cooperative. The rate paid by the Cooperative to the Member shall be the Cooperative's avoided energy cost, as detailed in the DG Tariff.

d) The Member shall sign an approved Interconnection Agreement, as detailed in this DG Manual, for interconnection service with the Cooperative.

e) In addition to all other charges, the Cooperative may bill the Member for any additional facilities charges as determined by the Cooperative and appended to the Interconnection Agreement.

3) Purchases from the Member

a) The Cooperative shall not be required to make any purchases that will cause the Cooperative to no longer be in compliance with any applicable contracts or all-power contract requirements with its Power Supplier(s).

b) Any purchase of energy from the Member shall be made as detailed in the DG Tariff.

VI. 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, 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) Notwithstanding 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, at the sole discretion of the Cooperative and/or its Power Supplier, is required to serve the Member's DG facility.

c) 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) In the event the Cooperative at any time in the future changes primary voltage of facilities serving the DG facility such that metering equipment, transformers and/or any other Member-owned equipment must be changed to continue receiving service at the new primary voltage level, the full cost of the change will be borne by the Member.

e) In all cases, the Member shall install a visible load break disconnect switch. The switch will be readily accessible to Cooperative personnel and of a type that can be secured in an open position by a Cooperative lock.

2) Applicable Regulations

The DG facility shall be installed and operated by the Member subject to and in accordance with the terms and conditions set forth in the Cooperative's rules, regulations, bylaws, rates and tariffs, as amended from time to time, and, if applicable, approved by the Cooperative's Board of Directors, which are incorporated herein by reference, and in compliance with all applicable federal, state and local laws, regulations, zoning codes, building codes, safety rules, environmental restrictions, ordinances and regulations, including without limitation, the most recent ***IEEE Standard 1547 Guide for Distributed Generation Interconnection***, applicable ANSI standards, including ANSI C84.1, Electric Reliability Council of Texas (ERCOT) Independent System Operator (ISO) directives and ERCOT guidelines, and in accordance with industry standard prudent engineering practices.

3) Liability Insurance

a) Facilities 20 kW and smaller

(i) Not required at this time but can be required at a future date at the sole discretion of the Cooperative.

b)

4) Contracts

a) Interconnection Contract
Refer to Section III, 2. a & b above.

5) Initial Interconnection

a) Upon satisfactory completion of the review process and execution of required agreements as outlined in this DG Manual, the Cooperative will begin installation of the interconnection of DG facilities. The interconnection will be completed as soon as practical after completion of the review process and execution of the necessary agreements/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 final inspection satisfactory to the Cooperative, the Cooperative will initiate service to the Member. Inspection costs will be determined by the Cooperative and shall be paid by the Member.

b) The Cooperative's review process and final inspection is intended as a means to help safeguard the Cooperative's facilities and personnel. 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 or DG facility to perform its intended function. The Cooperative and its Power Supplier disclaims any expertise or special knowledge relating to the design or performance of DG installations and does not warrant the efficiency, cost-effectiveness, safety, durability, or reliability of such DG installations.

VII. 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 facilities due to reasons such as safety concerns, reliability issues, power quality issues, breach of interconnection contract or any other issue which the Cooperative considers to be a reasonable basis for such action. Any disconnection may be without prior notice.

VIII. OPERATION OF PARALLEL FACILITY

The purpose of this section is to outline the Cooperative's operational requirements (the fulfillment of which is the responsibility of the Member) for DG facilities operated in parallel with the Cooperative's system and is not intended to be a complete listing of all operational, regulatory, safety and other requirements.

1) 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 delivery as defined in the DG Tariff.

b) At its sole discretion, the Cooperative may locate Cooperative owned metering equipment and/or transformers past the point of delivery.

2) 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 DG facilities operated in parallel with the Cooperative system.

b) The Member's equipment will have the capability to both establish and maintain synchronism with the Cooperative system and to automatically disconnect and isolate the DG facility from the Cooperative system.

c) The Member's DG facility 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, undervoltage, overcurrent, 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 facility installation and/or the Cooperative system characteristics so warrant.

3) Quality of service

a) The Member's DG facility will generate power at the nominal voltage of the Cooperative's system at the Member's delivery point as defined by ANSI C84.1.

b) Member's DG installation will generate power at a frequency within the tolerances as defined by IEEE 1547.

c) Member's DG facility shall produce power at a minimum power factor of at least 97% lagging but not leading or shall use power factor correction capacitors to ensure at least a 97% power factor lagging but not leading.

d) Member's DG facility shall be in accordance with the power quality limits specified in IEEE 519.

e) The overall quality of the power provided by the Member's DG facility 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.

f) In the event that adverse effects are caused in whole or in part by the Member's DG facility, the Member will correct the cause of such effects within 30 days of the initial adverse effect and, if applicable, reimburse the Cooperative for required correction. However, the disconnection of the facilities by the Cooperative is permitted if, in the sole judgment of the Cooperative, adverse affects may warrant immediate disconnection from the Cooperative's system per Section VIII.4.

4) Safety disconnect

a) The Member shall install a visible load break disconnect switch at the Member's expense and to the Cooperative's specifications.

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

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

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

(i) It is necessary to maintain safe electrical operating and/or maintenance conditions,

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

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

e) 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 facility. In the event the Cooperative opens and/or closes the disconnect switch:

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

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

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

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

h) Members with DG facilities as defined in this DG Manual which are solely for the purpose of emergency backup without intent to export power shall not operate their DG facilities at any time unless visibly disconnected from the Cooperative system. At its sole discretion, the Cooperative may require Member to install at his/her own expense an interlocking switch for the purpose of insuring the Member's facilities do not operate in parallel with the Cooperative's facilities.

i) Should the Cooperative lose power serving the Member's DG facilities for any reason, Members with DG facilities shall not operate their DG facilities unless visibly disconnected from the Cooperative system.

5) <u>Access</u>

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, maintaining right-of-way or other DG facility equipment and/or Cooperative 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 immediate full access for the above-mentioned reasons.

6) Liability for Injury and Damages

a) The Member assumes full responsibility for electric energy furnished by the Member and shall indemnify the Cooperative and/or its Power Supplier against and hold the Cooperative and/or its Power Supplier harmless from all claims for both injuries to persons, including death, and damages to property resulting therefrom.

b) The Cooperative and/or its Power Supplier shall not be liable for either direct or consequential damages resulting from failures, interruptions, or voltage and waveform fluctuations occasioned by causes reasonably beyond the control of the Cooperative and/or its Power Supplier including, but not limited to, acts of God or public enemy, acts of terrorism, 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. ALL PROVISIONS NOTWITHSTANDING, IN NO EVENT SHALL THE COOPERATIVE BE LIABLE TO THE MEMBER FOR ANY INTEREST, LOSS OF ANTICIPATED REVENUE, EARNINGS, PROFITS, OR INCREASED EXPENSE OF OPERATIONS, LOSS BY REASON OF SHUTDOWN OR NON-OPERATION OF MEMBER'S PREMISES OR FACILITIES, OR FOR ANY INDIRECT, INCIDENTAL, OR CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED, IN WHOLE OR PART, TO THIS AGREEMENT. THE COOPERATIVE SHALL NOT BE LIABLE IN ANY EVENT FOR CONSEQUENTIAL DAMAGES.

c) The Member is solely responsible for insuring that the Member's facility complies with all applicable regulations including, but not limited to, laws, regulations, ordinances, Cooperative and Cooperative Power Supplier tariffs, policies and directives, and ERCOT rules, policies and directives.

7) Metering/Monitoring

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

b) Facilities $\leq$ 20 kW
The facility will be metered by one of the following methods, at the sole discretion of the Cooperative:

(i) Installing two meters, one measuring the flow of energy delivered by the Cooperative and one measuring the flow of energy from the Producer

(ii) Installing an electronic meter with forward and reverse registers, each measuring the flow of energy in a single direction

c) The meter shall be read at a time or times of month determined at the Cooperative's sole discretion for acquiring metering data. The Member shall provide the Cooperative an approved communications link at the Member's cost for this purpose if so requested by the Cooperative. The type of communications link and metering equipment measuring purchase of power by the Cooperative shall be installed and specified at the sole discretion of the Cooperative.

d) The Cooperative may, at its sole discretion, require the Member to pay the Cooperative in advance for metering and monitoring equipment and installation expense.

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

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

8) 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 facility.

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 facility including, but not limited to, size of generator, total facility capacity, nature of facility, fuel source, site change, hours of operation, or type used, may, at the sole discretion of the Cooperative, require a new application process, including, but not limited to, application form, appropriate Agreement for Interconnection and Parallel Operation of DG, DG plan and DG plan review by the Cooperative.

9) Testing and Record Keeping

a) The Member will test all aspects of the protection systems up to and including tripping of the generator and interconnection point at start-up and thereafter as required. Testing will verify all protective set points and relay/breaker trip timing and shall include procedures to functionally test all protective elements of the system. The Cooperative may witness the testing.

b) The Member will maintain records of all maintenance activities, which the Cooperative may review at reasonable times.

c) For systems greater than 99 kW, a log of generator operations shall be kept. At a minimum, the log shall include the date, generator time on, generator time off, and megawatt and megavar output. The Cooperative may review such logs at reasonable times.

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 issue, which the Cooperative considers to be a reasonable basis for such action.

11) Compliance with Laws, Rules and Tariffs

The DG installation owned and installed by the Member shall be installed and operated by Member subject to and in accordance with the terms and conditions set forth in the Cooperative's rules, regulations, bylaws, rates and tariffs, as amended from time to time, and, if applicable, approved by the Cooperative's Board of Directors, which are incorporated herein by reference, and in compliance with all applicable federal, state and local laws, regulations, zoning codes, building codes, safety rules, environmental restrictions, ordinances and regulations, including without limitation, Electric Reliability Council of Texas (ERCOT) Independent System Operator (ISO) directives and ERCOT guidelines, and in accordance with industry standard prudent engineering practices.

For the purpose of Sections 341A-341E of this tariff, the following definitions shall apply:

Applicant: Bartlett Electric Cooperative Member requesting an interconnection agreement and the parallel operation of DG facilities.

Avoided Energy Costs: The incremental costs to an electric utility of electric energy which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source.

Contribution-in-aid-of-construction: A non-refundable Member contribution toward qualifying line extensions of Cooperative facilities to Member owned facilities. The amount required is set forth in the Cooperative's tariffs.

Cooperative's System: Those electric facilities owned, operated, and maintained by the Cooperative excluding those facilities owned, operated, and maintained by the Member divided by the point of delivery.

Day: A Day referred to herein shall mean a calendar day.

Disconnect Switch: A readily visible, accessible and lockable open point between the Member's DG Facilities and the Cooperative's source of power. It shall have full load break capability for all expected operating conditions.

Distributed Generation (DG): An electrical generation facility with 10 MW or less of capacity with a delivery voltage of 60 kilovolts or less located at the Member's point of delivery that may be connected in parallel with the Cooperative's utility system.

DG Facilities: Distributed Generation Facilities encompass all the equipment and control systems and wiring owned by the Member necessary to generate, modulate, monitor quality, connect, and disconnect electric energy in parallel with the Cooperative's utility system. A qualifying facility may include transmission lines and other equipment used for interconnection purposes (including transformers and switchyard equipment). Cooperative Revenue Metering is not included in the DG Facilities and is not owned nor operated by the Member.

DG Manual: A supplemental document to the Cooperative's Tariff providing guidelines and procedures for the process of making application, for providing the required information about, for requiring elements of design necessary to the safe operation of, ownership and liability of Distributed Generation Facilities.

DG Plan: Distributed Generation Plans are documents providing connection diagrams, equipment specifications, and electrical layouts describing the DG Facilities and physical locations.

ERCOT (Electric Reliability Council of Texas): The Electric Reliability Council of Texas operates the electric transmission grid.

Export Power: Electric energy produced for sale by DG facilities to the Cooperative.

IEEE 519: The Institute of Electrical and Electronic Engineers (IEEE) Standard outlining harmonic control on electric power systems.

IEEE 1547: The Institute of Electrical and Electronic Engineers Standard for Interconnecting Distributed Resources with Electric Power Systems. The standard was approved as an American National Standard in October 2003 and governs the means and ways of DG interconnection.

ISO (Independent System Operator): A Non-profit entity (effectively) that does not own transmission assets and that is responsible for operating the network reliably and economically. The ISO for Texas is ERCOT.

Interconnection: Interconnection occurs when DG facilities are constructed in such a manner as to tie the DG facilities to the Cooperative's facilities either directly or indirectly in a permanent or temporary manner.

Interconnection Agreement /Contract: The Interconnection Agreement or Contract as used herein shall refer to either the "Agreement for Interconnection and Parallel Operation of Distributed Generation: Renewable DG Producer" or "Agreement for Interconnection and Parallel Operation of Distributed Generation: Wholesale Producer" depending upon the classification and rate schedule of the connected Distributed Generation.

Interconnection Costs: The reasonable costs of connection, switching, metering, transmission, distribution, safety provisions and administrative costs incurred by the electric utility directly related to the installation and maintenance of the physical facilities necessary to permit interconnected operations with a qualifying facility, to the extent such costs are in excess of the corresponding costs which the electric utility would have incurred if it had not engaged in interconnected operations, but instead generated an equivalent amount of electric energy itself or purchased an equivalent amount of electric energy from other sources. Interconnection costs do not include any costs included in the calculation of avoided energy costs.

Member: The qualified entity or individual that has joined the Cooperative according to all the rules, regulations, and bylaws of the Cooperative.

Net Metering: The amount of total energy arising from the algebraic sum of the power flow from the Member's facilities and the power flow into the Member's facilities over a specified period of time.

Parallel Operation: Parallel operation occurs at any time when conditions exist where DG facilities are electrically connected to the Cooperative's facilities. An open switch when it is the only electrical point of connection does not allow parallel operation but does allow the possibility.

Point of Delivery: That point of connection separating the Cooperative's System from the Member owned electric facilities usually where the service drop is connected to the service entrance, where the connectors belong to the Cooperative.

Power Generating Installation: A qualifying small power production facility or a qualifying cogeneration facility under Subpart B of the Federal Energy Regulatory Commission's Regulations under Section 201 of the Public Utility Regulatory Policies Act of 1978 (or the latest version) including any generator, and associated equipment, wiring, protective devices, or switches owned or operated by Producer or Distributed Generation.

Power Quality: A set of boundaries for voltage, frequency, current, and harmonics that allow electrical systems to function in their intended manner without significant loss of performance or life.

Producer: A Member that owns or operates a qualified electric generation facility that produces electric energy for the purpose of selling wholesale electricity to the Cooperative, or to shave load.

Qualifying Facility: As defined by the Public Utility Regulatory Act of 1978 (PURPA), must have as its primary energy source biomass, waste, renewal resources or geothermal resources.

Qualifying Power Generating Installation: A small power production facility is a qualifying facility if it meets the criteria outlined in FERC Subpart B Section 292.204:

(1) Meets the maximum size criteria specified in § 292.204(a);
(2) Meets the fuel use criteria specified in § 292.204(b); and
(3) Has filed with the Commission a notice of self-certification, pursuant to § 292.207(a); or has filed with the Commission an application for Commission certification, pursuant to § 292.207(b) (1), that has been granted.

Renewable Energy Technology: Renewable energy is energy generated from natural resources—such as sunlight, wind, rain, tides and geothermal heat—which are renewable (naturally replenished). Renewable energy technologies include solar power, wind power, hydroelectricity, micro hydro, biomass and biofuels.

Renewable DG Producer : A Producer that operates on-site Distributed Generation of 20 kW or less that produces power by the use of renewable energy technology that exclusively relies on an energy source that is naturally regenerated over a short time and derived directly from the sun, indirectly from the sun, or from moving water or other natural movements and mechanisms of the environment such as wind.

Stand-alone or isolated DG: A DG facility that is not connected in any way to the Cooperative's facilities or to any other electric facilities that may or may not interconnect with the Cooperative's facilities and provide electric energy to specific loads.

Synchronism: A system condition where the frequency, magnitude, and phase angle of two separate voltage waveforms from separate power sources match.

System Emergency: A condition on the Cooperative's system which is likely to result in imminent significant disruption of service to customers or is imminently likely to endanger life or property.

Wholesale Producer : A Producer that operates a Power Generating Installation other than a Renewable DG Producer.

A. **Power Production and Generation**

Sections 341A-341E of this tariff apply to the interconnection and parallel operation of all qualifying power generating installations with the purpose of selling wholesale electricity to the Cooperative, as well as electric service to such generating installations. Any member owning or operating a qualifying Power Generating Installation shall be referred to as "Producer". It is the intent of the Cooperative to allow Producers to install Distributed Generation provided the Producer's Distribution facility does not adversely affect the Cooperative. If any part of these sections shall be in conflict with any other provision of this tariff, these sections shall control. By agreement, the Cooperative and Producer may establish additional or different terms, conditions, or rates for the sale or purchase of electricity.

B. **Obtaining Interconnection**

Any Producer desiring to interconnect with the Cooperative's system shall meet the following requirements. These requirements are conditions precedent to any obligation of the Cooperative to interconnect or provide any form of electric utility service.

1. **Comply with the Tariff** -- Producer must meet all Cooperative membership and service requirements, apply for interconnection by completing an Application for Operation of Member Owned Generation (the form of which is contained in the Cooperative's DG Manual), provide an easement satisfactory to the Cooperative (if required by the Cooperative) and otherwise comply with the tariff of the Cooperative.

2. **Provide Information** – At least six (6) weeks in advance of the date that interconnection is desired; Producer shall submit a plan showing the electric design of the generating installation including interconnection requirements, size, operational plans, and equipment for interconnection with the Cooperative's system. Producer shall also provide such additional information as may be required by the Cooperative. In the event the Producer's plan involves the use of non-standard equipment or design techniques, the Cooperative may require such plan be approved by a registered professional engineer.

   Any review or acceptance of such plan by the Cooperative shall not impose any liability on the Cooperative and does not guarantee the adequacy of Producer's equipment to perform its intended function. The Cooperative disclaims any expertise or special knowledge relating to the design or performance of generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability or reliability of generating installations.

3. **Pay for Extension of Cooperative's Facilities** -- Producer shall comply with conditions for extensions of the Cooperative's distribution system as may be determined by the Cooperative in accordance with the following extension policy:

   If an extension of Cooperative's distribution system is required for sale or receipt of electric energy to or from a generating installation, whether or not in conjunction with another use, the Cooperative shall exercise prudent judgment in determining the conditions under which such extension will be made. Each case shall be viewed individually considering (1) cost to provide service, (2) longevity of the load, (3) annual load factor, (4) possibility of other loads developing along the proposed line extension, (5) longevity, capacity, and dependability of energy to be received by the Cooperative, (6) anticipated annual revenue, and (7) compatibility with planned system improvements.

   The Cooperative may require Producer to pay a contribution-in-aid-of-construction that equals the amount of material and labor necessary to construct electric facilities to Producer and/or modifications to Cooperative's distribution system required as a result of Producer's equipment. The Cooperative may also require Producer to pay in advance for an Engineering Study to be conducted by the Cooperative's Engineering Consultant that will determine what if any modifications are required to the Cooperative's distribution system to accommodate Producer's equipment. If necessary, this Engineering Study will take a minimum of four (4) weeks.

4. **Provide Liability Insurance** -- Not required at this time but can be required at a future date at the sole discretion of the Cooperative.

5. **Sign Contract** -- Producer shall sign and deliver to the Cooperative an Agreement for Interconnection and Parallel Operation (the form of which is contained in the Cooperative's DG Manual).

6. **Complete Construction** -- Producer shall construct the power generating installation and install a disconnect switch and other protective equipment as may be required by the Cooperative to protect its personnel, facilities, and operations.

7. **Comply with Laws, Policies, Standards, and Specifications** -- Producer shall comply with Federal, State, and local laws, ordinances and regulations applicable to power generating installations. The Producer is responsible for and must follow the Cooperative's tariffs, line extension policies, the policies and procedures of the Cooperative's Power Supplier where applicable, and the policies and procedures of the Cooperative's transmission service provider where applicable. The producer is responsible for and must follow the current ***Institute of Electrical and Electronics Engineers (IEEE) 1547 Standard Guide for Distribution Generation Interconnection,*** other applicable IEEE standards, the current National Electric Code (NEC) 690, and applicable ANSI standards.

8. **Notify Cooperative** -- Producer shall notify the Cooperative in writing at least two (2) weeks in advance of energizing the power generating installation and permit the Cooperative to inspect and test protective equipment.

9. **Eliminate Conditions Preventing Interconnection** -- In the event that it comes to the attention of the Cooperative that there are conditions preventing safe interconnection and proper parallel operation, it shall notify the Producer and Producer shall not interconnect and/or initiate parallel operation until such conditions are corrected and Producer has provided at least two (2) weeks written notice to the Cooperative.

The foregoing are conditions precedent to any obligation of the Cooperative to interconnect or provide any form of electric utility service.

C. **Parallel Operation**

1. **Installation** -- With the exception of the Cooperative's meter(s), the Producer shall own and be solely responsible for all expense, installation, maintenance, and operation of the power generating installation at and beyond the point where the Producer's conductors contact Cooperative's conductors. The Producer's generating installation shall be designed and installed in accordance with applicable codes, regulations and prudent engineering practice.

   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. In the event that the interconnection does not pass the inspection, the project will be turned down and must be re-inspected following the necessary corrections. Upon satisfactory final inspection, the Cooperative will initiate service to the Producer. The Cooperative's final inspection is intended as a means to safeguard the Cooperative's facilities and personnel. The Producer acknowledges and agrees that any review and acceptance of such plans, specifications, and other information by the Cooperative shall not impose any liability on the Cooperative and does not guarantee the adequacy of the Producer's equipment or generating facility to perform its intended function.

2. **Self-Protected Generating Installation** -- The Producer 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's electric distribution system. The equipment will have the capability to both establish and maintain synchronism with the Cooperative's system and to automatically disconnect and isolate the generating installation from the Cooperative's system in the event of an outage of the Cooperative or a malfunction of the power generating installation.

   The Producer's power generating installation will also be designed, installed and maintained to be protected from normal and abnormal conditions in the Cooperative's electric distribution system. The conditions for which the power generating installation shall be self-protected shall include, but not be limited to: overvoltage, undervoltage, overcurrent, frequency deviation, lightning and faults. The self-protection will be compatible with the Cooperative's system protection arrangements and operating policies. Specialized protective functions may be required by the Cooperative when, in the sole judgment of the Cooperative, the particular generating installation characteristics and/or distribution system characteristics so warrant.

3. **Quality of Service** -- Producer's generating installation will generate power at the nominal voltage of the Cooperative's electric distribution system at the Producer's delivery point as defined by ANSI C84.1 and at the nominal system frequency of 60 Hz within the tolerances as defined by IEEE 1547. Producer shall generate at a power factor that is as near one hundred percent (100%) as is practicable but not leading. In the event that the power factor is less than ninety-seven percent (97%) lagging or leading, the Producer will provide proper power factor correction or reimburse the Cooperative for the cost of any necessary correction.

   The overall quality of the power provided by Producer 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's electric distribution system is not adversely affected in any manner. In the event that adverse effects are caused in whole or in part by Producer's power generating installation, the Producer will correct the cause of such effects or reimburse the Cooperative for the cost of any required correction.

   The Cooperative may, at its sole discretion, prevent the interconnection or disconnect the interconnection of generating facilities due to reasons such as safety concerns, reliability issues, power quality issues, breach of interconnection contract or any other reasonable issue. Any disconnection may be without prior notice.

4. **Safety Disconnect** -- A Renewable DG Producer shall install, at Producer's expense, inverters with specifications and test standards UL 1741-1999 (or latest version) to provide isolation. In addition, a main disconnect switch will be installed by the Producer to provide a means of disconnection.

   A Wholesale Producer, or at the Wholesale Producer's option, the Cooperative, shall provide and install, at the Wholesale Producer's expense, a visible, remotely SCADA-controlled, motor-operated, air-break disconnect switch, a radio for remote communication to the Cooperative Control Center, and remote terminal unit (RTU) compatible to the Cooperative SCADA.

   For all interconnected systems, the disconnect switch will be located so as to be readily accessible to Cooperative personnel in a location acceptable to both the Producer and the Cooperative. It shall be the type of switch which can be secured in an open position by a Cooperative padlock. The Cooperative shall have the right to lock the switch open whenever, in the judgment of the Cooperative, (1) it is necessary to maintain safe electrical operating maintenance conditions, (2) the Producer's power generating installation adversely affects the Cooperative's electric distribution system, or (3) there is a system emergency or other abnormal operating condition which warrants disconnection.

   The Cooperative reserves the right to operate the disconnect switch for the protection for the Cooperative's system even if it affects Producer's power generating installation. In the event the Cooperative opens and closes the disconnect switch, it shall not be responsible for energization or restoration of parallel operation of the generating installation. The Cooperative will make reasonable efforts to notify the Producer in the event the disconnect switch has been operated. The Producer will not bypass the disconnect switch at any time for any reason.

5. **Access** -- Persons authorized by the Cooperative will have the right to enter the Producer's property for the purpose of operating or inspecting the disconnect switch or metering. Such entry onto the Producer's property may be without notice. If the Producer erects or maintains locked gates or other barriers, the Producer will furnish the Cooperative with convenient means to circumvent the barrier for access to the disconnect switch and meter(s).

6. **Modifications of Cooperative System** -- In the event that it is necessary at the time of initial interconnection or at some future time for the Cooperative to modify its electric distribution system in order to purchase or continue to purchase Producer's output, the Producer will reimburse the Cooperative for all just and reasonable costs of modifications which are allocable to the Producer's Power Generating Installation.

   The modifications may include, but are not limited to, special interconnection equipment, protective devices, control devices and/or upgrading of distribution system components. In addition, in the event the Cooperative at any time in the future changes primary voltage of facilities serving the generating facility such that metering equipment, transformers, and/or any other Producer-owned equipment must

be changed to continue receiving service at the new primary voltage level, the full cost of the change will be borne by the Producer.

7. **Liability for Injury and Damages** -- Producer assumes full responsibility for electric energy furnished to same, at and past, the point of interconnection. Producer also will 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 Producer arising from electric power and energy delivered by Cooperative or in any way arising directly or indirectly from Producer's generating installation except (1) when the negligence of Cooperative or its agent or agents was the sole proximate cause of injuries, including death therefrom, to Producer or to employees of Producer or in the case of a residential Producer, to all members 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 Cooperative or its agent(s), independent of and unrelated to the maintenance of Cooperative's facilities or any condition on Producer's premises or (b) the breach by Cooperative of any provision of any contract regarding purchase and/or sale of electrical energy or service between Cooperative and Producer.

   The Cooperative shall not be liable for either direct or consequential damages resulting from failures, interruptions, voltage, and direct or waveform fluctuations occasioned by causes reasonably 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(s), 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 proximity caused by the negligent acts of the Cooperative or its agent(s). The Cooperative shall not be liable in any event for consequential damages.

8. **Metering** -- Any necessary meters or meter modification will be installed, maintained and operated by the Cooperative at the Producer's expense.

   A connection will be provided for the meter(s) at the Producer's expense in a location that is acceptable to both the Cooperative and the Producer. The Cooperative may, at its own expense, supply, install and maintain load research metering for the purpose of monitoring and evaluating the Producer's generating installation.

The Cooperative shall specify, install and own all metering equipment. The facility will be metered by one of the following methods, at the sole discretion of the Cooperative:

a. Installing one meter with two registers, each measuring the flow of energy in a single direction
or
b. Install two meters; one measuring energy delivered by the Cooperative and one measuring energy from the Producer.

The meter(s) will, by comparison with accurate standards, be tested and calibrated as often as necessary. The Producer or the Cooperative may reasonably request such tests, and shall be given notice of not less than five (5) working days when such tests are to be made. Both the Producer and the Cooperative will have the right to be present at such tests. If a meter is found to be inaccurate, it shall be restored to an accurate condition or replaced. If the tests disclose that no unacceptable inaccuracies exist in the meter(s), then the party requesting the tests shall bear the expense of the tests. A report of the results of any tests shall be furnished promptly by the party making such tests to the other party. Any meter(s) registering a deviation of not more than two percent (2%) from normal shall be deemed accurate. The readings of any meter(s) which have been inaccurate shall be corrected according to the percentage of inaccuracy as determined by the tests for a period of no more than ninety (90) days prior to the tests. If any meter fails to register for any period, the facility output during such period shall be estimated in the best manner possible as agreed upon by the Cooperative and the Producer.

9. **Notice of Change in Installation** -- Producer will notify the Cooperative in writing fourteen (14) days in advance of making any change affecting the characteristics, performance, or protection of the generating installation. If it comes to the Cooperative's attention that the modification will create or has created conditions which may be unsafe or adversely affect the Cooperative's system then it shall notify Producer and Producer shall immediately correct such condition.

10. **Insurance** -- Not required at this time but can be required at a future date at the sole discretion of the Cooperative.

11. **Disconnection of Service** -- The Cooperative may at its sole discretion discontinue the interconnection of Power Generating Installations due to reasons such as safety concerns, reliability issues, power quality issues, breach of interconnection contract, or any other reasonable issue.

D. **Sales to Producers**

Producer's rate classification shall be designated by the Cooperative in accordance with the availability and type of service provisions in its rate schedules for all service. The Cooperative shall bill the Producer for the full energy used by the Producer during each billing period according to the Cooperative's applicable retail rate schedule.

E. **Purchases from Producer**

1. **Purchases from Producer**

a. Effective with the January 2023 billing, the Cooperative will grandfather in Producers that were connected before December 31, 2022 for one year and will pay a Renewable DG Producer on a monthly basis for all the metered kWh output (if any) from the Renewable DG Producer above and beyond that was used by the Renewable DG Producer. The price paid by the Cooperative will be the Cooperative's avoided energy cost of wholesale energy for generation. The Cooperative will pay Renewable DG Producers connected after January 1, 2023 on a monthly basis for all the metered kWh output (if any) from the Renewable DG Producer. The price paid by the Cooperative will be the Cooperative's avoided energy cost of wholesale energy for generation.

b. The Cooperative will pay a Wholesale Producer on a monthly basis for the energy supplied by the Wholesale Producer to the Cooperative. The rate paid by the Cooperative to the Wholesale Producer that owns a Qualifying Facility shall be the Cooperative's avoided energy cost of wholesale energy for generation. The rate paid by the Cooperative to the Wholesale Producer that does not own a Qualifying Facility shall be a negotiated rate.

2. **Refusal to Purchase** -- The Cooperative may, at certain times and as operating conditions warrant, reasonably refuse to accept part or all of the output of the Producer's facility. Such refusal shall be based on system emergency constraints, special operating requirements, changes in wholesale generation contractual requirements, and adverse effects of the Producer's facility on the Cooperative's system or violation by the producer of the terms of the Agreement for Interconnection and Parallel Operation. The Cooperative shall not be required to make any purchases that will cause the Cooperative to no longer be in compliance with any applicable contracts or all-power contract requirements with the Cooperative's power supplier(s).

BARTLETT ELECTRIC COOPERATIVE, INC.

APPLICATION FOR OPERATION OF MEMBER OWNED GENERATION

This application should be completed as soon as possible and returned to the Bartlett Electric Cooperative, Inc. (c/o Engineering Services Supervisor) in order to begin processing the request. See Distributed Generation Tariff and Distributed Generation Procedures and Guidelines Manual for Members for additional information.

INFORMATION: *This application is used by the Cooperative to determine the required equipment configuration for the Applicant interface. Every effort should be made to supply as much information as possible. Please print or type legibly.*

PART 1

OWNER/APPLICANT INFORMATION

Coop Member or Company Name:_____
Mailing Address:_____
City:_____ County:_____ State:_____ Zip Code:_____
Phone Number: _____ Representative (if company): _____

TYPE OF GENERATOR (as applicable)

A. Small Renewable ≤ 20 kW
Photovoltaic _____ Wind _____ Other (describe) _____

B. Combustion Distributed Generation (Wholesale Producer)
Micro Turbine _____
Diesel Engine _____ Gas Engine _____ Turbine Other _____

PROJECT DESIGN/ENGINEERING (as applicable)

Company:_____
Mailing Address:_____
City:_____ County:_____ State:_____ Zip Code:_____
Phone Number: _____ Representative: _____

ELECTRICAL CONTRACTOR (as applicable)
Company:_____
Mailing Address:_____
City:_____ County:_____ State:_____ Zip Code:_____
Phone Number: _____ Representative: _____

ESTIMATED LOAD INFORMATION

The following information will be used to help properly design the Cooperative customer interconnection. This information is not intended as a commitment or contract for billing purposes.

Total DG AC Output _____(kW)

Mode of Operation (check all that apply)
Isolated _____ Paralleling _____ Power Export _____

DESCRIPTION OF PROPOSED INSTALLATION AND OPERATION

Give a general description of the proposed installation, including when you plan to operate the generator.

_____
_____
_____
_____
_____
_____
_____

PART 2

(Complete all applicable items. Copy this page as required for additional generators.)

SYNCHRONOUS GENERATOR DATA

Unit Number: _____ Total number of units with listed specifications on site: _____
Manufacturer:_____
Type: _____ Date of manufacture: _____
Serial Number (each): _____
Phases: Single _____ Three _____ R.P.M.: _____ Frequency (Hz): _____
Rated Output (for one unit): _____ Kilowatt _____ Kilovolt-Ampere _____
Rated Power Factor (%): _____Rated Voltage (Volts) _____ Rated Amperes: _____
Field Volts: _____Field Amps:_____ Motoring power (kW):_____
Synchronous Reactance (X'd):_____ % on _____ kVA base
Transient Reactance (X'd): _____ % on _____ kVA base
Subtransient Reactance (X'd): _____ % on _____ kVA base
Negative Sequence Reactance (Xs): _____ % on _____ kVA base
Zero Sequence Reactance (Xo): _____ % on _____ kVA base
Neutral Grounding Resistor (if applicable): _____
_____
$I_2^2 t$ of K (heating time constant): _____
Additional Information: _____
_____

INDUCTION GENERATOR DATA

Rotor Resistance (Rr): _____ ohms Stator Resistance (Rs): _____ ohms
Rotor Reactance (Xr): _____ ohms Stator Reactance (Xs): _____ ohms
Magnetizing Reactance (Xm): _____ ohms Short Circuit Reactance (Xd"): _____ ohms
Design letter: _____ Frame Size: _____
Exciting Current: _____ Temp Rise (deg C°): _____
Reactive Power Required: _____ Vars (no load), Vars _____ (full load)
Additional Information: _____
_____

PRIME MOVER (Complete all applicable items)

Unit Number: _____ Type: _____
Manufacturer: _____
Serial Number: _____ Date of manufacturer: _____
H.P. Rates: _____ H.P. Max.: _____ Inertia Constant: _____ lb.-ft^2
Energy Source (hydro, steam, wind, etc.) _____
_____
_____

GENERATOR TRANSFORMER (Complete all applicable items)

TRANSFORMER (between generator and utility system)
Generator unit number: _____ Date of manufacturer: _____
Manufacturer: _____
Serial Number: _____
High Voltage: _____ kV, Connection: delta wye, Neutral solidly grounded? _____
Low Voltage: _____ kV, Connection: delta wye, Neutral solidly grounded? _____
Transformer Impedance (Z):_____ % on _____ kVA base
Transformer Resistance (R): _____ % on _____ kVA base
Transformer Reactance (X): _____ % on _____ kVA base
Neutral Grounding Resistor (if applicable: _____
_____

INVERTER DATA (if applicable) (typical for small renewable wind and solar)

Manufacturer: _____ Model: _____
Rate Power Factor (%): _____ Rated Voltage (Volts): _____ Rated Amperes: _____
Inverter Type (ferroresonant, step, pulse-width modulation, etc.) _____
Type commutation: forced line (typical for utility interactive; meets IEEE 1547)
Harmonic Distortion: Maximum Single Harmonic (%) _____
Maximum Total Harmonic (%) _____
Note: Attach all available calculations, test reports, and oscillographic prints showing inverter output voltage and current waveforms.

POWER CIRCUIT BREAKER (if applicable)
Manufacturer: _____ Model: _____
Rated Voltage (kilovolts): _____ Rated ampacity (Amperes) _____
Interrupting rating (Amperes): _____ BIL Rating _____
Interrupting medium / insulating medium (ex. Vacuum, gas, oil) _____/_____
Control Voltage (Closing): _____ (Volts) AC DC
Control Voltage (Tripping): _____ (Volts) AC DC Battery Charged Capacitor
Close energy: Spring Motor Hydraulic Pneumatic Other: _____
Trip energy: Spring Motor Hydraulic Pneumatic Other: _____
Bushing Current Transformers: _____ (Max. ratio) Relay Accuracy Class: _____
Multi Ratio? No Yes: (available taps) _____

ADDITIONAL INFORMATION

In addition to the items listed above, please attach a detailed one-line diagram of the proposed facility, all applicable elementary diagrams, major equipment (generators, transformers, inverters, circuit breakers, protective relays, etc.), specifications, test reports, etc., and any other applicable drawings or documents necessary for the proper design of the interconnection. Additionally, a $200 non-refundable DG Application Fee must be paid before this Application is processed. However, if existing Cooperative facilities are not adequate to serve the proposed DG facilities the additional cost to upgrade these facilities must be paid as a non-refundable contribution-in-aid-of-construction before construction begins.

SIGN OFF AREA

The applicant agrees to provide the Cooperative with any additional information requested by the Cooperative to assist in the review of this Application required to complete the interconnection. The applicant shall operate his equipment within the guidelines set forth by the Cooperative.

_____ _____
Applicant (signature) Date

_____
Applicant (printed/typed name)

BARTLETT ELECTRIC COOPERATIVE, INC. CONTACT FOR APPLICATION SUBMISSION AND FOR MORE INFORMATION:

Cooperative contact: Engineering Services Supervisor
Address: 27492 Highway 95
Bartlett, Texas 76511

Phone: 254-527-3551
Fax: 254-527-3221

BARTLETT ELECTRIC COOPERATIVE, INC

COOPERATIVE AGREEMENT FOR INTERCONNECTION AND PARALLEL OPERATION OF DISTRIBUTED GENERATION ("Interconnection Agreement")

SHORT FORM CONTRACT

This Interconnection Agreement ("Agreement") is made and entered into this ____ day of _____, 20____, ("Effective Date") by Bartlett Electric Cooperative, Inc., ("Cooperative"), a corporation organized under the laws of Texas, and _____ ("DG Owner/Operator"), each hereinafter sometimes referred to individually as "Party" or both referred to collectively as the "Parties". In consideration of the mutual covenants set forth herein, the Parties agree as follows:

The provisions of the Cooperative's Distributed Generation Tariff ("DG Tariff") shall be considered to be a part of this contract.

This agreement provides for the safe and orderly operation of the DG Owner/Operator's electrical facilities and the interconnection of the DG Owner/Operator's facility(ies) (collectively "Facility") at_____ _____and the electrical distribution system ("System") owned by the Cooperative.

This Agreement does not supersede any requirements of any applicable tariffs in place between the DG Owner/Operator and the Cooperative.

1. **Intent of Parties**: It is the intent of the DG Owner/Operator to interconnect an electric power generator to the Cooperative's electrical distribution system.

It is the intent of the Cooperative to operate the distribution system to maintain a high level of service to its customers and to maintain a high level of power quality.

It is the intent of both parties to operate in a way that helps ensure the safety of the public and respective employees.

2. **Establishment of Point of Interconnection -** The point where the electric energy first leaves the wires or facilities of the system owned by the Cooperative and enters the wires or facilities of the Facility provided by DG Owner/Operator is the "Point of Interconnection." Cooperative and DG Owner/Operator agree to interconnect the Facilities at the Point of Interconnection in accordance with the Cooperative's DG Tariff.

3. **Operating authority**: The DG Owner/Operator is responsible for establishing operating procedures and standards within their organization. The operating authority for the DG Owner/Operator and its operating authority shall ensure that the Operator in Charge of the generator constituting a part of the Facility is competent in the operation of the electrical generation system and is aware of the provisions of any operating agreements and regulations relating to the safe operation of electrical power systems.

The operating authority for the DG Owner/Operator is:

Name or title of operating authority_____
Address _____
Phone number _____

4. **Operator in Charge**: The Operator in Charge is the person identified by name or job title responsible for the real time operation of the Facility owned or leased by the DG Owner/Operator.

The Operator in Charge for the DG Owner/Operator is:

Name or title of operating authority_____
Address _____
Phone number _____

5. **Limitation of Liability and Indemnification:**

a. Notwithstanding any other provision in this Agreement, with respect to the Cooperative's provision of electric service to DG Owner/Operator and the services provided by the Cooperative pursuant to this Agreement, Cooperative's liability to DG Owner/Operator shall be limited as set forth in the Cooperative's tariffs and terms and conditions for electric service, which are incorporated herein by reference.

b. Neither Cooperative nor DG Owner/Operator shall be liable to the other for damages resulting from a Force Majeure event as hereinafter defined.

c. Notwithstanding Paragraph 5.b of this Agreement, the DG Owner/Operator shall assume all liability for, and shall indemnify and hold harmless Cooperative for, any claims, losses, damages, liabilities, costs, and expenses of any kind or character to the extent that they result from DG Owner/Operator's negligence or other wrongful conduct (including the negligence or wrongful conduct of DG Owner/Operator's operators and their agents, employees, or contractors) in connection with the design, construction or operation of the Facilities. Such indemnity shall include, but is not limited to, financial responsibility for (a) monetary losses; (b) reasonable costs and expenses of defending an action or claim; (c) damages related to death or injury; (d) damages to property; and (e) damages for the disruption of business.

d. Cooperative and DG Owner/Operator shall each be responsible for the safe installation, maintenance, repair and condition of their respective lines, wires, switches, or other equipment or property on their respective sides of the Point of Interconnection. The Cooperative, while retaining the right to inspect, does not assume any duty of inspecting the DG Owner/Operator's lines, wires, switches, or other equipment or property and will not be responsible therefore. DG Owner/Operator assumes all responsibility for the electric service supplied hereunder and the facilities used in connection therewith.

e. For the mutual protection of the DG Owner/Operator and the Cooperative, only with the Cooperative's prior written authorization are the connections between the Cooperative's service wires and the DG Owner/Operator's service entrance conductors to be energized.

f. The provisions of this Section 5 shall survive any termination of this Agreement.

6. **Metering:** Metering shall be accomplished as described in the Cooperative's DG Tariff.

7. **Insurance:** Insurance shall be required as described in the Cooperative's DG Tariff.

8. **Suspension of Interconnection**: It is intended that the interconnection should not compromise the Cooperative's protection or operational requirements. The operation of the DG Owner/Operator's Facility and the quality of electric energy supplied by the DG Owner/Operator shall meet the standards as specified by the Cooperative. If the operation of the DG Owner/Operator's Facility or quality of electric energy supplied (in the case of power export) does not meet the standards as specified, then the DG Owner/Operator shall take reasonable and expedient corrective action, including any such corrective action as requested by the Cooperative. The Cooperative shall have the right to disconnect the DG Owner/Operator's Facility, until compliance is reasonably demonstrated. Notwithstanding, the Cooperative may in its sole discretion disconnect the DG Owner/Operator's Facility from the distribution system without notice if the operating of the Generating Plant may be or may become dangerous to life and property.

9. **Compliance with Laws, Rules and Tariffs:** Both the Cooperative and the DG Owner/Operator shall be responsible for complying with all applicable laws, rules and regulations, including but not limited to the laws of the state of Texas, and the Cooperative's DG Tariff, other Tariffs, Rules and Regulations, By-Laws and other governing documents. The interconnection and services provided under this Agreement shall at all times be subject to the terms and conditions set forth in the tariff schedules and rules of the Cooperative as applicable to the electric service provided by the Cooperative, which tariffs and rules are hereby incorporated into this Agreement by this reference. The Cooperative shall have the right to publish changes in rates, classification, service or rule, with the proper notification to all DG owners/operators and Cooperative members.

10. **Maintenance Outages**: Maintenance outages will occasionally be required on the Cooperative's system, and the Cooperative will provide reasonable notice and planning as practicable to minimize downtime. It is noted that in some emergency cases such notice may not be reasonably possible. Compensation will not be made for unavailability of Cooperative's system due to outages.

11. **Access**: Access is granted as may be required by the Cooperative to the DG Owner/Operator's Facility for maintenance, operating and meter reading. The Cooperative reserves the right, but not the obligation, to inspect the DG Owner/Operator's Facility.

12. **Force Majeure:** For the purposes of this Agreement, a Force Majeure event is any event:

(a) that is beyond the reasonable control of the affected party; and

(b) that the affected Party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent that they satisfy the preceding requirements: acts of war, acts of terrorism, public disorder, rebellion or insurrection; floods, hurricanes, earthquakes, lighting, storms or other natural calamities; explosions or fires; strikes, work stoppages or labor disputes; embargoes; and sabotage. If a Force Majeure event prevents a Party from fulfilling any obligations under this agreement, such Party will promptly notify the other Party in writing and will keep the other Party informed on a continuing basis as to the scope and duration of the Force Majeure event. The affected Party will specify the

circumstances of the Force Majeure event, its expected duration and the steps that the affected Party is taking to mitigate the effect of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Agreement if a Force Majeure event prevents a Party from fulfilling such performance of obligations but will use reasonable efforts to resume its performance as soon as possible.

13. **Assignment -** At any time during the term of this Agreement, the DG Owner/Operator may assign this Agreement to a corporation, an entity with limited liability or an individual (the "Assignee"), provided that the DG Owner/Operator obtains the prior written consent of the Cooperative in advance of the assignment. The Cooperative's consent will be at the Cooperative's discretion based on whether or not the Cooperative determines that the Assignee is financially and technically capable to assume ownership and/or operation of the DG unit. The company or individual to which this Agreement is assigned in accordance with the terms and conditions of this Agreement will be responsible for the proper operation and maintenance of the DG Facilities, and will be a party to all provisions of this Agreement.

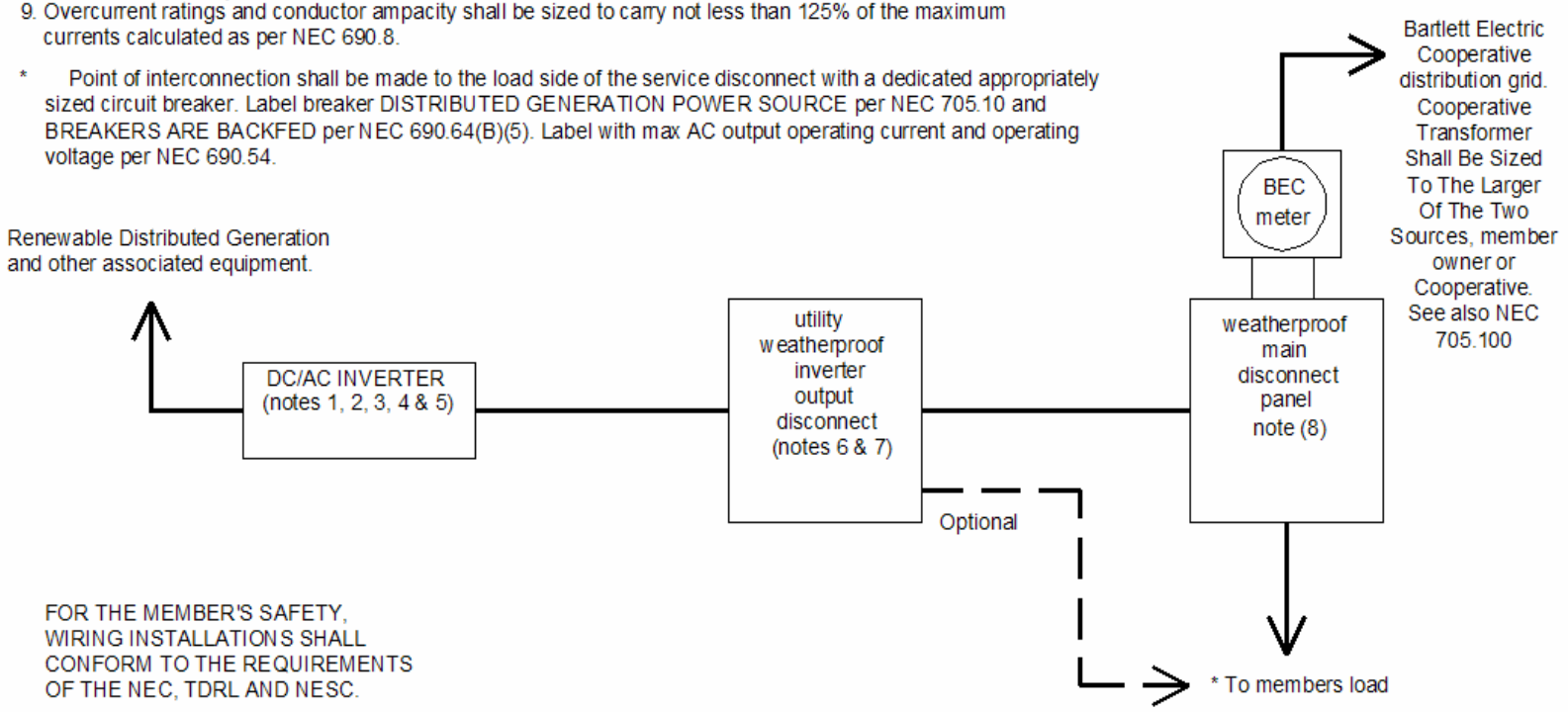
14. **Term**: The term of this Agreement is a period of two (2) years from the Effective Date ("Initial Term"). This Agreement shall automatically renew in (1) year increments after the Initial Term unless terminated sooner. This Agreement may be canceled by either party with 30 days prior written notice to the other party during the Initial Term or any renewal period.

AGREED TO BY:

DG Owner/Operator	Cooperative
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Date Signed	Date Signed

1. Installation of one or more electrical power production sources shall only be installed by qualified persons per NEC 705.6 ONLY UTILITY INTERACTIVE SYSTEMS SHALL BE CONNECTED.
2. Ground-Fault Protection provided in DC/AC inverter.
3. Inverter is Listed to UL-1741 Utility-interactive.
4. Equipment is required to be Non-islanding to ensure compliance with IEEE 1547 and PUC Rule 25.212.
5. Where multiple inverters are installed remotely from each other a directory in accordance with NEC 705.10 shall be installed at each PV disconnecting means, each ac disconnecting means and at the main service disconnecting means.
6. Label DISTRIBUTED GENERATION SYSTEM UTILITY DISCONNECT SWITCH. Switch to be located on exterior of building in a readily accessible location. Switch shall be lockable in the open position per NEC 705.22.
7. Provide warning sign per NEC 690.17 reading WARNING- ELECTRICAL SHOCK HAZARD- DO NOT TOUCH TERMINALS- TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OFF POSITION.
8. Sign on interior of weatherproof main disconnect panel per NEC 702.8 (A) notifying the type of interactive system and location of utility disconnect switch.
9. Overcurrent ratings and conductor ampacity shall be sized to carry not less than 125% of the maximum currents calculated as per NEC 690.8.

* Point of interconnection shall be made to the load side of the service disconnect with a dedicated appropriately sized circuit breaker. Label breaker DISTRIBUTED GENERATION POWER SOURCE per NEC 705.10 and BREAKERS ARE BACKFED per NEC 690.64(B)(5). Label with max AC output operating current and operating voltage per NEC 690.54.

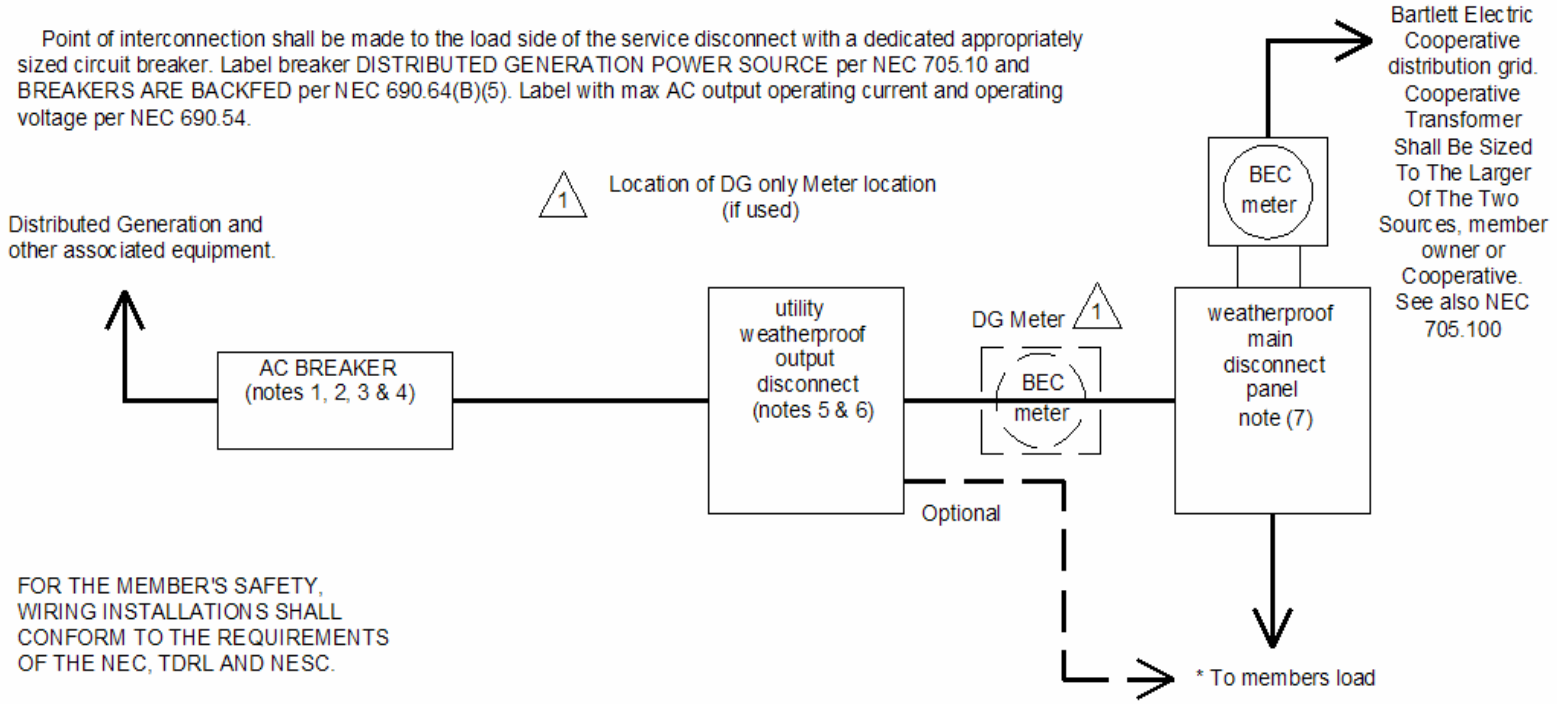


FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDRL AND NESC.

	Bartlett Electric Cooperative, Inc 27492 HWY 95 Bartlett, TX 76511	ONE-LINE DIAGRAM FOR RENEWABLE SYSTEM (SOLAR OR WIND)	DRAWN BY: REV2-SE	JOB CODE:	APPROVED BY: KS
			SCALE: NONE	DATE: 12-1-2010	DRAWING NO.

1. Installation of one or more electrical power production sources shall only be installed by qualified persons per NEC 705.6 ONLY UTILITY INTERACTIVE SYSTEMS SHALL BE CONNECTED.
2. Ground-Fault Protection provided in DC/AC breaker.
3. Equipment or/ module must have a listing label per NEC 110.3(B).
4. Equipment is required to be Non-islanding to ensure compliance with IEEE 1547 and PUC Rule 25.212.
5. Label DISTRIBUTED GENERATION SYSTEM UTILITY DISCONNECT SWITCH. Switch to be located on exterior of building in a readily accessible location. Switch shall be lockable in the open position per NEC 705.22.
6. Provide warning sign per NEC 690.17 reading WARNING- ELECTRICAL SHOCK HAZARD- DO NOT TOUCH TERMINALS- TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OFF POSITION.
7. Sign on interior of weatherproof main disconnect panel per NEC 702.8 (A) notifying the type of interactive system and location of utility disconnect switch.
8. Overcurrent ratings and conductor ampacity shall be sized to carry not less than 125% of the maximum currents calculated as per NEC 690.8.

* Point of interconnection shall be made to the load side of the service disconnect with a dedicated appropriately sized circuit breaker. Label breaker DISTRIBUTED GENERATION POWER SOURCE per NEC 705.10 and BREAKERS ARE BACKFED per NEC 690.64(B)(5). Label with max AC output operating current and operating voltage per NEC 690.54.



FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDRL AND NESC.

Bartlett Electric Cooperative, Inc 27492 HWY 95 Bartlett, TX 76511	ONE-LINE DIAGRAM FOR WHOLESALE SYSTEM	DRAWN BY: REV2-SE	JOB CODE:	APPROVED BY: KS
		SCALE: NONE	DATE: 12-1-2010	DRAWING NO.