
Section 24 COGENERATION AND SMALL POWER PRODUCTION

Cooperative is a member of Corn Belt Power Cooperative and Northwest Iowa Power Cooperative, generation and transmission cooperatives ("G&T" or "Corn Belt" or "NIPCO") and obtains all of its wholesale power from these G&Ts. The Cooperative and Corn Belt, and the Cooperative and NIPCO have filed Joint Implementation Plans with the Federal Energy Regulatory Commission ("FERC") which provides for coordinated implementation of the obligations of Corn Belt and Cooperative, and NIPCO and Cooperative relative to qualifying facilities (QF). Pursuant to said Plan, Cooperative agrees to provide to any qualifying facility (QF) in its service territory supplementary, backup, maintenance, and interruptible power and Corn Belt or NIPCO agrees to purchase energy and capacity from said facility within the respective G&T's service territory, all in accordance with the requirements of the Public Utilities Regulatory Policies Act ("PURPA"). Those provisions of this tariff relating to sales to the qualifying facility shall apply to Cooperative and those provisions regarding purchases from the qualifying facility shall apply to Corn Belt or NIPCO. Accordingly, any qualifying facility seeking services pursuant to this tariff should coordinate their efforts with both Corn Belt or NIPCO and Cooperative. The Cooperative also notes that Corn Belt and NIPCO obtains its wholesale power from Basin Electric Power Cooperative, and coordination with said entity may also be necessary.

24.1 Availability

This section shall apply to any member-owner within the Cooperative's assigned service area owning or leasing a qualifying facility who meets the definitions under the rules of the Public Utility Regulatory Policies Act of 1978, as a qualifying alternate energy production facility, or a qualifying small hydro facility ("QF" or "qualifying Facility"). A member-owner owning or leasing electric generating equipment shall not connect it in parallel with the Cooperative or G&T's system without the prior written consent of the Cooperative or G&T. Any third-party wishing to locate a qualifying facility on the member-owner's premise who wishes to sell the output of said facility to the member-owner, shall not operate the facility in parallel with the Cooperative or G&T's system without the prior written consent of the Cooperative or G&T. Failure of the member-owner or third-party to comply with the Cooperative or G&T's requirements for parallel generation shall be justification for discontinuance of such parallel operation in such a manner as to least inconvenience the member-owner until such time as full compliance has been accomplished. Each of these types of facilities shall comply with all of the Cooperative or G&T requirements and general rules for electric service, as well as the specific provisions of this section. For purposes of interconnecting a qualifying facility owned by a third-party to the Cooperative or G&T's system, the third-party shall be responsible for complying with the interconnection requirements and shall submit an application to the Cooperative on the applicable forms. Said third-party shall be deemed the interconnection member-owner for the purpose of this tariff.

24.2 Definitions

Unless otherwise defined herein, terms used shall have the same meaning as defined in 199 IAC 45.1.

“Avoided Costs” means the incremental costs to the Cooperative/G&T of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, the Cooperative/G&T would generate itself or purchase from another source. The Cooperative purchases all of its power requirements from its wholesale power suppliers, G&T. As reflected in the Joint PURPA Implementation Plan filed with FERC by Cooperative and Corn Belt and NIPCO, the Cooperative’s avoided costs shall equal those of Corn Belt or NIPCO and Corn Belt or NIPCO shall be responsible for calculating the Cooperative’s Avoided Costs.

24.3 Requirements for Interconnection

All facilities shall meet certain requirements to be eligible for interconnection pursuant to the terms and conditions of this section. The Cooperative shall assist the applicant in determining the appropriate level of review process required for the interconnection. The Cooperative has developed 4 levels of review process. The appropriate level generally depends upon the size and type of generator and the type of interconnection requested. The levels of review are described in Section 24.5 of this tariff. For purposes of determining the appropriate level of review and the appropriate metering and other interconnection requirements, the nameplate capacity of all Qualifying Facilities located on the same premises and having common ownership shall be aggregated.

24.3.1 Application for Interconnection

The applicant shall submit an application and any associated fees to the Cooperative, using the application form provided by the Cooperative (Level 1 or Level 2-4). The applicant shall contact the Cooperative with any questions regarding interconnection.

24.3.2 Acceptable Interconnection Standards

Permission to interconnect with the Cooperative or G&T electric system is contingent upon the following conditions:

- A. The member-owner shall comply with acceptable standards for interconnection, safety, and operating reliability. Acceptable standards include the most current revisions of the following, as adopted in the Iowa Administrative Code section 199-15.10(1) in order to be eligible for interconnection to the Cooperative or G&T electric system:

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1. Standards for Interconnecting Distributed Resources with Electric Power Systems, ANSI/IEEE Standard 1547-2003. For guidance in applying IEEE Standard 1547, the Cooperative may refer to:
 - 1) IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems - IEEE Standard 519-2014; and,
 - 2) IEC/TR3 61000-3-7 Assessment of emission limits for fluctuating loads in MV and HV power systems.
 2. Iowa Electrical Safety Code, as defined in 199—Chapter 25.
 3. National Electrical Code, ANSI/NFPA 70-2014.
- B. The member-owner facility shall meet the standards for interconnection as set forth in the Cooperative's Interconnection Agreements and the attachments thereto. Said Agreements are available by contacting the Cooperative.
- C. The member-owner shall agree to indemnify and defend the Cooperative and G&T and their representatives against liability for any injuries or damages caused by the operation of the member-owner's equipment or by any failure of the member-owner to maintain such equipment in satisfactory or safe operating condition. The member-owner will arrange for and maintain liability insurance with limits of not less than those set forth in the Interconnection Agreements, with the insurance requirements varying depending upon the size of the interconnecting generator. Failure to maintain required insurance or proof of financial responsibility shall be cause for disconnection. The Cooperative and G&T shall be named as additional insureds, to the extent specified in the Interconnection Agreements.
- D. The member-owner shall reimburse the Cooperative or G&T for costs incurred by the Cooperative or G&T for all costs of connection, switching, metering, transmission, distribution, safety provisions and administrative costs incurred by the Cooperative or G&T directly related to the installation and maintenance of the physical facilities necessary to permit interconnected operations with a qualifying facility (or qualifying alternate energy production facilities, or qualifying small hydro facilities), to the extent the costs are in excess of the corresponding costs which the Cooperative or G&T 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 or capacity from other sources. Interconnection costs do not include any costs included in the calculation of avoided costs.

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- E. The member-owner shall agree to discontinue sales to Cooperative/G&T when, due to operational circumstances, purchases from the member-owner will result in G&T costs greater than those which G&T would incur if it did not make such purchases, but instead generated an equivalent amount of energy, provided, however, that G&T shall notify the member-owner within a reasonable amount of time to allow the member-owner to cease the delivery of energy.
- F. The applicant and the Cooperative shall execute the applicable Interconnection Agreement prior to interconnection. In the event the applicant desires to sell any excess output from its facility to the G&T, a separate power purchase agreement shall be required for all interconnections except Level 1. For Level 1 interconnections, the terms of purchase are set out on Attachment 2 to the Level 1 Application Form and Interconnection Agreement.
- G. The member-owner shall permit Cooperative or G&T representatives to enter upon member-owner's property at any reasonable time for the purpose of inspecting or testing member-owner's equipment, facilities or apparatus and the accuracy of the Cooperative or G&T's metering equipment, but such inspections shall not relieve the member-owner of the obligation to maintain the member-owner's facilities in satisfactory operating conditions. The Cooperative or G&T may charge the direct expense of such inspecting or testing of the member-owner's equipment, facilities, or apparatus to the member-owner, unless the member-owner can demonstrate the inspecting and testing was not necessary. The member-owner shall adopt a program of inspection of the generator and its appurtenances and the interconnection equipment in order to determine necessity for replacement and repair.
- H. The member-owner shall be responsible for the costs of installation and maintenance of any necessary power factor correction capacitors. Member-owners with a distributed generation facility larger than or equal to 1 MVA shall design their distributed generation facilities to maintain a power factor at the point of interconnection between .95 lagging and .95 leading at all times. Member-owners with a distributed generation facility smaller than 1 MVA shall design their distributed generation facility to maintain a power factor at the point of interconnection between .90 lagging and .90 leading at all times.
- I. The member-owner's electric generating equipment shall be designed; operated and maintained in such a manner that it does not adversely affect the Cooperative's or G&T's system or their service to their other members.
- J. A distributed generation facility placed in service after July 1, 2015, is required to have installed a disconnection device. The disconnection device shall be installed, owned, and maintained by the owner of the distributed

generation facility and shall be easily visible and adjacent to an interconnection member-consumer's electric meter at the facility.

Disconnection devices are considered easily visible and adjacent: for a home or business, up to ten feet away from the meter and within the line of sight of the meter, at a height of 30 inches to 72 inches above final grade; or for large areas with multiple buildings that require electric service, up to 30 feet away from the meter and within the line of sight of the meter, at a height of 30 inches to 72 inches above final grade. The disconnection device shall be labeled with a permanently attached sign with clearly visible letters that give procedures/directions for disconnecting the distributed generation facility.

1. If an interconnection member-consumer with distributed generation facilities installed prior to July 1, 2015, adds generation capacity to its existing system that does not require upgrades to the electric meter or electrical service, a disconnection device is not required. The member-consumer must notify the Cooperative before the generation capacity is added to the existing system, which may require a new/amended application form and interconnection agreement.
 2. If an interconnection member-consumer with distributed generation facilities installed prior to July 1, 2015, upgrades or changes its electric service, the new or modified electric service must meet all current Cooperative service rule requirements.
- K. For all distributed generation installations, the member-consumer shall be required to provide and place a permanent placard no more than ten feet away from the electric meter. The placard must be visible from the electric meter. The placard must clearly identify the presence and location of the disconnection device for the distributed generation facilities on the property. The placard must be made of material that is suitable for the environment and must be designed to last for the duration of the anticipated operating life of the distributed generation facility. If no disconnection device is present, the placard shall state "no disconnection device". If the distributed generation facility is not installed near the electric meter, an additional placard must be placed at the electric meter to provide specific information regarding the distributed generation facility and the disconnection device.
- L. The interconnection shall include overcurrent devices on the facility to automatically disconnect the facility at all currents that exceed the full-load current rating of the facility
- M. Distributed generation facilities with a design capacity of 100 kVA or less must be equipped with automatic disconnection upon loss of Cooperative-supplied voltage

- N. Distributed generation facilities that produce a terminal voltage prior to the closure of the interconnection shall be provided with synchronism-check devices to prevent closure of the interconnection under conditions other than a reasonable degree of synchronization between the voltages on each side of the interconnection switch.
- O. The operator of the distributed generation facility shall adopt a program of inspection and testing of the generator and its appurtenances and the interconnection facilities in order to determine necessity for replacement and repair. Such a program shall include all periodic tests and maintenance prescribed by the manufacturer. If the periodic testing of interconnection-related protective functions is not specified by the manufacturer, periodic testing shall occur at least once every five years. All interconnection-related protective functions shall be periodically tested, and a system that depends upon a battery for trip power shall be checked and logged. The operator shall maintain test reports and shall make them available upon request by the Cooperative. Representatives of the Cooperative shall have access at all reasonable hours to the interconnection equipment specified in 199 IAC 45.3(2) for inspection and testing with reasonable prior notice to the applicant.
- P. When the distributed generation facility is placed in service, owners of interconnected distributed generation facilities are required to notify local fire departments via U.S. mail of the location of distributed generation facilities and the associated disconnection device(s). The owner is required to provide any information related to the distributed generation facility as reasonably required by that local fire department including but not limited to:
1. A site map showing property address; service point from the Cooperative; distributed generation facility and disconnect location(s); location of rapid shutdown and battery disconnect(s), if applicable; property owner's or owner's representative's emergency contact information; Cooperative's emergency telephone number; and size of the distributed generation facility.
 2. Information to access the disconnection device.
 3. A statement from the owner verifying that the distributed generation facility was installed in accordance with the current state-adopted National Electrical Code.

24.4 Rates for Purchased Power

24.4.1 Rates for purchases by the member-owner from the Cooperative

The member-owner shall purchase electric power and energy from the Cooperative at the Cooperative's applicable price or rate, depending upon the

member-owner's operations and requirements. The Cooperative has a separate price or rate schedule established for various classes of members and reserves the right to create a separate price or rate schedule for co-generators and small power producers based upon the unique characteristics of such member-owners when adequate historical analysis of the account's usage and generator characteristics become available. All member-owners with generators 150 kW or greater who elect to self-generate shall be subject to the member standby rate.

24.4.2 Rates for purchases from member-owner

General PURPA purchase rates:

Payment for purchases from the member-owner pursuant to this tariff provision shall be as follows:

QFs with design capacity of less than 50 kW

The rate(s) for purchases from qualifying facility (as defined above) and with a design capacity of less than 50 kilowatts are available by contacting the Cooperative. These rates will be consistent with 18 CFR 292.304.

QFs with design capacity of 50 kW or greater but less than 150 kW

The rate(s) for purchases from qualifying facility (as defined above) and with a design capacity of 50 kilowatts or greater but less than 150 kW are available by contacting the Cooperative. These rates will be consistent with 18 CFR 292.304.

QFs with a design capability of 150 kW and greater

The rate(s) for purchases from qualifying facilities (as defined above) and with a design capacity of 150 kilowatts or greater are available on a negotiated case-by-case basis with the G&T.

Net Metering Option:

The Cooperative has developed a net metering option for facilities with an installed design capability at any one geographic location of less than 50 kW and which is intended to serve only the electrical requirements of the owner of the net metering facility. Such facilities will be referred to in this tariff individually as "Net Metering Facility." The availability of the net metering rate option is subject to a total system wide cap of 5000 kW, which is the value of the nameplate capacity of the sum of all small renewable QF facilities located on the Cooperative's distribution system and is subject to change by the Cooperative's Board of Directors. The net metering terms will be as set forth in Attachment 2 of the Level 1 Standard Application Form and Interconnection Agreement (Appendix B) or the Separate Power Purchase Agreement for other Levels of interconnection.

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Subtraction of electric heat metering is not allowed under the net metering option.

Small Renewable Alternate Energy Rate/Consumer Wind Energy Purchase Rate/ Distributed Generation Purchase Rate:

Member-owners with their own generation may be eligible for special incentive rates made available through the Cooperative/G&T. These rates are in lieu of the PURPA Avoided Cost Rate and the rates are available by contacting the Cooperative. A QF electing this rate must meet the eligibility criteria as set forth in the applicable rate schedule and must complete the associated application forms.

24.4.3 Wheeling Charges

Cooperative/G&T may provide a wheeling service to a facility interconnected to its electric delivery system. Any charges for the wheeling of power will be determined by the Cooperative/G&T and in accordance with any applicable regulations. In addition, Cooperative/G&T reserve(s) the right to refuse to wheel power where its existing facilities do not have adequate capacity and the member-owner refuses to pay the costs to upgrade those facilities. If a qualifying facility agrees, the Cooperative/G&T which would otherwise be obligated to purchase electricity from such facility may transmit the electricity to any other electric utility. Any electric utility to which such electricity is transmitted shall purchase such electricity as if the facility were supplying electricity directly to such electric utility. The rate for purchase by the electric utility to which such electricity is transmitted shall be adjusted downward according to the mutual agreement of the transmitting and receiving utilities, to reflect any wheeling line losses and shall not include any charges for transmission.

24.5 Levels of Review

Level 1

Level 1 Application and Agreement shall be used for all interconnection requests to connect a distributed generation facility when:

- a. The applicant has filed a Level 1 application; and
- b. The distributed generation facility has a nameplate capacity rating of less than 50 kVA; and
- c. The distributed generation facility is inverter-based; and
- d. The member-owner interconnection equipment proposed for the distributed generation facility is lab-certified; and
- e. No construction of facilities by the cooperative or G&T shall be required to accommodate the distributed generation facility.

To remain in Level 1, the following screens must be met:

- For interconnection to a radial distribution circuit, the total of all DG connected may not exceed 15% of the maximum load normally supplied by the circuit
- For interconnection on a single-phase shared secondary line, the aggregate generation capacity on the line will not exceed 20 kVA
- When the DG facility is single-phase and proposes to interconnect on a center tap neutral of a 240-volt service, its addition may not create an imbalance between the 2 sides of the 240-volt service of more than 20% of nameplate rating of the service transformer
- Utility shall not be required to construct any facilities on its own system to accommodate the DG facility's interconnection
- For interconnection to a spot network, DG will use protective equipment to ensure power imported from utility to the network will remain above 1% of the network's maximum load over the last year

Level 2

Level 2 Application and Agreement shall be used for evaluating interconnection requests when:

- a. The applicant has filed a Level 2 application; and
- b. The nameplate capacity rating is 150 kVA or less; and
- c. The interconnection equipment proposed for the distributed generation facility is lab-certified; and
- d. The proposed interconnection is to a radial distribution circuit or a spot network limited to serving one member-owner; and
- e. No construction of facilities by the cooperative or G&T shall be required to accommodate the distributed generation facility, other than minor modifications permitted by the Cooperative.

To remain in Level 2, the following screens must be met:

- For interconnection to a radial distribution circuit, the total of all DG connected may not exceed 15% of the maximum load normally supplied by the circuit
- The proposed DG, in aggregation with other DG on the distribution circuit, may not contribute more than 10% to the circuit's maximum fault current at the point on the primary line nearest the point of interconnection
- The proposed DG, in aggregation with other DG on the circuit, shall not cause any electric utility distribution devices to be exposed to fault currents exceeding 90% of their short-circuit interrupting capability.
- When a DG facility is to be connected to a 3-phase, 3 wire primary line, a 3-phase or single-phase generator shall be connected phase-to-phase
- When a DG facility is to be connected to a 3-phase, 4 wire primary line, a 3-phase or single-phase generator shall be connected line-to-neutral and shall be grounded
- For interconnection on a single-phase shared secondary line, the aggregate generation capacity on the line will not exceed 20 kVA
- When the DG facility is single-phase and proposes to interconnect on a center tap neutral of a 240-volt service, its addition may not create an imbalance between the 2 sides of the 240-volt service of more than 20% of nameplate rating of the service transformer
- A DG facility, in aggregate with other DG facilities interconnected to the distribution side of a substation transformer feeding the circuit where the facility proposed to interconnect, may not exceed 10 MVA in an area where there are transient stability limitations
- Utility shall not be required to construct any facilities on its own system to accommodate the DG facility's interconnection, except minor modifications following agreed upon additional review.
- For interconnection to a spot network, DG will use protective equipment to ensure power imported from utility to the network will remain above 1% of the network's maximum load over the last year

Level 3

Level 3 Application and Agreement shall be used for evaluating interconnection requests to area networks and radial distribution circuits where power will not be exported based on the following criteria.

- a. For interconnection requests to the load side of an area network, the following criteria shall be satisfied to qualify for a Level 3 expedited review:
 - (1) The applicant has filed a Level 3 application; and
 - (2) The nameplate capacity rating of the distributed generation facility is 50 kVA or less; and

- (3) The proposed distributed generation facility uses a lab-certified inverter-based equipment package; and
 - (4) The distributed generation facility will use reverse power relays or other protection functions that prevent the export of power into the area network; and
 - (5) The aggregate of all generation on the area network does not exceed the lower of 5 percent of an area network's maximum load or 50 kVA; and
 - (6) No construction of facilities by the Cooperative or G&T shall be required to accommodate the distributed generation facility.
- b. For interconnection requests to a radial distribution circuit, the following criteria shall be satisfied to qualify for a Level 3 expedited review:
- (1) The applicant has filed a Level 3 application; and
 - (2) The aggregated total of the nameplate capacity ratings of all of the generators on the circuit, including the proposed distributed generation facility, is less than 150 kVA; and
 - (3) The distributed generation facility will use reverse power relays or other protection functions that prevent power flow onto the electric distribution system; and
 - (4) The distributed generation facility is not served by a shared transformer; and
 - (5) No construction of facilities by the Cooperative or G&T on their own systems shall be required to accommodate the distributed generation facility.

To remain in Level 3, the following screens must be met:

- Utilize the same screens as are applicable for level 2 interconnections; except for the one prohibiting the total DG connected to a radial distribution circuit from exceeding 15% of the maximum load normally supplied by the circuit

Level 4

Level 4 Application and Agreement shall be used for evaluating interconnection requests when:

- a. The applicant has filed a Level 4 application; and
- b. The nameplate capacity rating of the small generation facility is 10 MVA or less; and
- c. Not all of the interconnection equipment or distributed generation facilities being used for the application are lab-certified, or
- d. Applicant is unable to comply with level 1 through 3 screens.