



*Lake Region Electric Cooperative
6 kW GoWest Demonstration Solar
Pelican Rapids, Minnesota*

Simplified Process

ABSTRACT

Guide for interconnecting a 20 kW alternating current (AC) solar system or less to your home or business.

1 Applicability

1.1. Capacity Limit

The *Simplified Process* is only applicable to certified, inverter-based distributed energy resource (DER) systems with the capacity of 20 kW alternating current (AC) or less. The capacity is determined by the aggregated summation of the nameplate rating of the inverters that make up the DER system. Additional information regarding the capacity limits is found in the Cooperative-Minnesota Interconnection Process (C-MIP) *Overview Process*, Section 6.

1.2. Certified Inverters

A certified inverter will have certification of meeting the current version of the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547. A common inverter certification is UL 1741. Note that certified inverters may still need to have a setting adjusted to meet the technical requirements of the area electric power system (EPS) operator. Additional information regarding certified equipment is found in *Overview Process*, Section 14 and Section 15.

2 Application Submission

2.1. Simplified Interconnection Application Process

The interconnection member shall complete the *Simplified Interconnection Application* and submit it to the area EPS operator to initialize the interconnection process. A *Simplified Interconnection Application* will include the following:

- A completed *Simplified Interconnection Application* signed by the interconnection member.
- A non-refundable processing fee of \$100.
- An aerial site layout drawing of the proposed DER system.
- A one-line diagram of the proposed DER system showing the point of common coupling (PCC) to the area EPS operator's distribution system,
- All certified equipment manufacturer specification sheets.

2.2. Battery Storage

An inverter-based DER system may include battery storage. DER systems that include battery storage must also complete the *Energy Storage Application* with the *Simplified Interconnection Application*.

2.3. Site Control

By signing the *Simplified Interconnection Application*, the interconnection member is indicating that the proposed DER system is being located where the interconnection member has site control. Site control includes ownership of a leasehold interest in or a right to develop a site for the purpose of construction of DER. Additional

information regarding site control can be reviewed in the *Overview Process*, Section 4.8.

3 Application Review

3.1. Timelines

The interconnection application shall be date- and time-stamped upon initial, and if necessary, resubmission receipt. The interconnection member shall be notified of receipt by the area electric power system (EPS) operator within 10 business days of receipt of the interconnection application.

The area EPS operator shall notify the interconnection member if the interconnection application is deemed incomplete within 10 business days and provide a written list detailing all information that must be provided to complete the interconnection application. The interconnection member has 5 business days to provide the missing information unless additional time is requested with valid reasons. Failure to submit the requested information within the stated timeline will deem the interconnection application withdrawn. The area EPS operator has an additional 5 business days to review the additionally provided information for completeness.

An interconnection application will be deemed complete upon submission to the area EPS operator provided all documents, fees, and information required with the application adhering to Minnesota technical requirements is included. The date- and time-stamp of the completed interconnection application shall be accepted as the qualifying date for purpose of establishing a queue position, as described in the *Overview Process*, Section 4.7.

The area EPS operator has a total of 20 business days to complete the interconnection application, review from the receipt of a completed interconnection application, and submit notice back to the interconnection member stating the proposed distributed energy resource (DER) system may proceed with the interconnection process or the proposed DER system has been moved into a different process track. The duration period waiting for the interconnection member to provide missing information is not included in the area EPS operator's 20-business day review timeline.

3.2. Initial Review Screens

The area EPS operator shall determine if the DER can be interconnected safely and reliably using initial review screens and without the construction of facilities by the area EPS operator. The initial review screens include the following engineering screens:

- The proposed DER's point of common coupling (PCC) must be on a portion of the area EPS operator's distribution system.
- For interconnection of a proposed DER to a radial distribution circuit, the aggregated generation, including the proposed DER, on the circuit shall not

exceed 15 percent of the line section annual peak load as most recently measured or 100 percent of the substation aggregated minimum load. A line section is that portion of an area electric power system (EPS) operator’s electric system connected to a member bounded by automatic sectionalizing devices or the end of the distribution line. The area EPS operator may consider 100 percent of applicable loading (i.e., daytime minimum load for solar) if available, instead of 15 percent of line section peak load.

- For interconnection of a proposed distributed energy resource (DER) to the load side of network protectors, the proposed DER must utilize an inverter-based equipment package and together with the aggregated other inverter-based DERs shall not exceed the smaller of 5 percent of a network’s maximum load or 50 kW.¹
- The proposed DER, in aggregation with other DERs on the distribution circuit, shall not contribute more than 10 percent to the distribution circuit’s maximum fault current at the point on the high voltage (primary) level nearest the proposed point of common coupling (PCC).
- The proposed DER in aggregate with other DER’s on the distribution circuit shall not cause any distribution protective devices and equipment (including but not limited to substation breakers, fuse cutouts, and line reclosers) or interconnection member equipment on the system to exceed 87.5 percent of the short circuit interrupting capability, nor shall the interconnection be proposed for a circuit that already exceeds 87.5 percent of the short circuit interrupting capability.
- Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the interconnecting member, including line configuration and the transformer connection to limit the potential for creating over-voltages on the area EPS operator’s electric power system, due to a loss of ground during the operating time of any anti-islanding function.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Results
Three-phase, three-wire	Three-phase or single-phase, phase-to-phase	Pass screen
Three-phase, four-wire	Effectively-grounded three-phase or single-phase, line-to-neutral	Pass screen

¹Network protectors are protective devices used on secondary networks (spot and grid networks) to automatically disconnect its associated transformer when reverse power flow occurs. Secondary networks are most often used in densely-populated downtown areas.

- If the proposed distributed energy resource (DER) is to be interconnected on single-phase, shared secondary, the aggregate generation capacity on the shared secondary, including the proposed DER, shall not exceed 20 kW or 65 percent of the transformer nameplate rating.
- If the proposed DER is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20 percent of the nameplate rating of the service transformer.

The technical screens listed shall not preclude the area electric power system (EPS) operator from using tools that perform screening functions using different methodologies given the analysis is aimed at preventing the voltage, thermal, and protection limitations as the listed screen.

3.3. Notification of Approval of Application

Provided the *Simplified Interconnection Application* passes the initial screens or if the proposed interconnection fails the screens but the area EPS operator determines that the DER may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the area EPS operator shall provide notice to the interconnection member that their *Simplified Interconnection Application* has been approved.

3.4. Failure of Review Screens

If the proposed interconnection fails the screens, the interconnection member will be notified by the area EPS operator that the *Simplified Interconnection Application* has been moved to the *Fast-Track Process*. The area EPS operator shall provide the interconnection member the opportunity to attend a member options meeting. Additional information regarding the member options meeting is found in *Fast-Track Process*, Section 3.5. The interconnection member will need to provide a completed interconnection application to the area EPS operator prior to or at the member options meeting.

The area EPS operator shall notify the interconnection member of the determination and provide copies of all directly pertinent data and analyses underlying its conclusion, subject to confidentiality provisions in the *Overview Process*, Section 12.1.

4 Interconnection Agreement

4.1. Uniform Contract

The area EPS operator shall provide the interconnection member with an executable copy of the area EPS operator's *Uniform Statewide Contract for Cogeneration and Small Power Production Facilities (Uniform Contract)* within 5 business days of notice of approval of the *Simplified Interconnection Application*.

4.2. Cooperative Minnesota Interconnection Agreement

The interconnection member may request on the *Simplified Interconnection Application* an executable copy of the area electric power system (EPS) operator's Cooperative-Minnesota Interconnection Process *Interconnection Agreement* in lieu of signing the *Uniform Contract*. If the *Interconnection Agreement* is requested, the area EPS operator shall provide an executable copy of the *Interconnection Agreement* within 5 business days of notice of approval of the *Simplified Interconnection Application*.

4.3. Completion of Agreement

The interconnection member must return a signed *Uniform Contract* or *Interconnection Agreement* 30 business days prior to a requested in-service date of the propose distributed energy resource (DER). The area EPS operator shall sign and return a copy of the fully executed *Uniform Contract* or the *Interconnection Agreement* back to the interconnection member.

The interconnection member may update the requested in-service date submitted on the interconnection application to a date 30 business days or later from the date on which the interconnection member submits a signed *Uniform Contract* or *Interconnection Agreement* and payment, if required, unless the area EPS operator agrees to an earlier date.

Upon receipt of the signed *Uniform Contract* or *Interconnection Agreement*, the area EPS operator may schedule appropriate metering replacements and construction of facilities, if necessary.

5 Insurance

5.1. Insurance Requirements

At minimum, the interconnection member shall maintain for the duration the DER system is interconnected to the area EPS operator's distribution system, \$300,000 of general liability insurance from a qualified insurance agency with a B+ or better rating by "Best." Such general liability insurance shall include coverage against claims for damages resulting from, 1) bodily injury, including wrongful death; and 2) property damage arising out of the interconnection member's ownership and/or operation of the DER under this agreement. Evidence of the insurance shall state that coverage provided is primary and is not excess to or contributing with any insurance or self-insurance by the area EPS operator.

5.2. Self-Insurance

The interconnection member may choose to be self-insured provided there is an established record of self-insurance. The interconnection member shall supply the area EPS operator at least 20 days prior to the date of initial operation, evidence of an acceptable plan to self-insure to a level of coverage equivalent to that required in Section 5.1. Failure of the interconnection member or the area EPS operator to

enforce the minimum levels of insurance does not relieve the interconnection member from maintaining such levels of insurance or relieve the interconnection member of any liability.

5.3. Proof of Insurance

Prior to initial operation of the distributed energy resource (DER), the interconnection member shall furnish the area electric power system (EPS) operator with the declarations page of the homeowner's insurance policy documenting insurance of the DER, if applicable, or other insurance certificates and endorsements documenting insurance. Thereafter, the area EPS operator shall have the right to periodically inspect or obtain a copy of the original policy or policies of insurance. Additionally, the area EPS operator may request to be additionally listed as an interested third party on the insurance certificates and endorsements to meet the right to periodically obtain a copy of the policy or policies of insurance.

6 Timeline Extensions

6.1. Reasonable Efforts

The area EPS operator shall make reasonable efforts to meet all time frames provided in these procedures. If the area EPS operator cannot meet a deadline provided herein, it must notify the interconnection member in writing within 3 business days after the deadline to explain the reason for the failure to meet the deadline and provide an estimated time by which it will complete the applicable interconnection procedure in the process.

6.2. Extensions

For applicable time frames described in these procedures, the interconnection member may request in writing one extension equivalent to half of the time originally allotted (e.g., 10 business days for a 20-business day original time frame), which the area EPS operator may not unreasonably refuse. No further extensions for the applicable time frame shall be granted absent a force majeure event or other similarly extraordinary circumstance.

7 Modifications to Application

7.1. Procedures

At any time after the interconnection application is deemed complete, the interconnection member or the area EPS operator may identify modifications to the proposed DER system that may improve costs and benefits (including reliability) of the proposed DER system and the ability for the area EPS operator to accommodate the proposed DER system. The interconnection member shall submit to the area EPS operator in writing all proposed modifications to any information provided in the interconnection application. The area EPS operator cannot unilaterally modify the interconnection application.

7.2. Timelines

Within 10 business days of receipt of the proposed modification, the area electric power system (EPS) operator shall evaluate whether the proposed modification to the interconnection application constitutes a material modification. The definition in the *Overview Process*, Section 13, includes examples of what does and does not constitute a material modification.

The area EPS operator shall notify the interconnection member in writing of the final determination of the proposed modification. For proposed modifications that are determined to be a material modification, the interconnection member may choose to either 1) withdraw the proposed modification; or 2) proceed with a new interconnection application. The interconnection member shall provide its determination in writing to the area EPS operator within 10 business days after being provided the material modification determination. If the interconnection member does not provide its determination within the timeline, the specified interconnection application shall be considered withdrawn.

If the proposed modification is not determined to be a material modification, the area EPS operator shall notify the interconnection member in writing that the modification has been accepted and the interconnection member shall retain its eligibility for interconnection, including its place in the queue.

8 Interconnection

8.1. Metering

Any metering requirements necessitated by the use of the DER system shall be installed at the interconnection member's expense. The metering requirement costs will be included in the final invoice of interconnection costs to the interconnection member. The interconnection member is also responsible for metering replacement costs not covered in the interconnection member's general member charge. The area EPS operator may charge the interconnection member an ongoing metering-related charge for an estimate of ongoing metering-related costs specifically demonstrated.

8.2. Construction

The interconnection member may proceed to construct (including operational testing not to exceed 2 hours) the DER system when the area EPS operator has approved the *Simplified Interconnection Application*. Upon receipt of a signed *Uniform Contract* or *Interconnection Agreement*, the area EPS operator shall schedule and execute appropriate construction of facilities, if necessary, which shall be completed prior to the interconnection member returning the *Certification of Completion*. The area EPS operator will notify the interconnection member when construction of the distribution facilities are completed.

8.3. Inspection, Testing and Commissioning

Upon completing construction of the distributed energy resource (DER) system, the interconnection member will cause the DER system to be inspected or otherwise certified by the appropriate local electrical wiring inspector with jurisdiction. The interconnection member shall then arrange for the inspection and testing of the DER system and the member's interconnection facilities prior to interconnection pursuant to Minnesota interconnection technical requirements. Commissioning test of the interconnection member's installed equipment shall be performed pursuant to applicable codes and standards of Minnesota's technical requirements. The interconnection member shall provide the area electric power system (EPS) operator with a *Certification of Completion* after completion of the DER installation.

Prior to parallel operation, the area EPS operator may inspect the DER for compliance with standards, which may include a witness test and schedule appropriate metering replacements, if necessary. The area EPS operator shall send qualified personnel to the DER site to inspect the interconnection and witness the testing but takes no liability for the results of the test.

The area EPS operator is obligated to complete the witness test, if required, within 10 business days of receipt of the *Certification of Completion*. If the area EPS operator does not inspect within 10 business days, the witness test is deemed waived, unless upon mutual agreement of both parties to extend the timeline for the witness test.

Within 3 business days of satisfactory inspection or waiver of inspection, the area EPS operator shall provide the interconnection member written acknowledgment that the DER has permission to operate. Such written acknowledgment shall not be deemed or construed as any representation, assurance, guarantee, or warranty by the area EPS operator of the safety, durability, suitability, or reliability of the DER or any associated control, protective, and safety devices owned or controlled by the interconnection member or the quality of power produced by the DER.

If the witness test is not satisfactory, the area EPS operator has the right to disconnect the DER. The interconnection member has no right to operate in parallel, except for optional testing not to exceed 2 hours, until permission to operate is granted by the area EPS operator.

8.4. Interconnection Costs

The interconnection member shall pay for the actual cost of the interconnection facilities and distribution upgrades along with the area EPS operator's cost to commission the proposed DER system. An estimate of the interconnection costs shall be stated in the *Uniform Contract or Interconnection Agreement*. The area EPS operator shall render the final interconnection cost invoice to the interconnection member within 30 business days after the proposed DER system has been commissioned by the EPS operator or upon the commissioning being waived by the area EPS operator. The interconnection member shall make payment to the area

EPS operator within 21 business days of receipt or as otherwise stated in the *Uniform Contract*.

Area electric power system (EPS) operator does not give any warranty, expressed or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances, or devices owned, operated, installed, or maintained by the interconnection member, including without limitation the distributed energy resource (DER) and any structures, equipment, wires, appliances, or devices not owned, operated, or maintained by the area EPS operator.

8.5. Authorization for Parallel Operation

The interconnection member shall not operate its DER system in parallel with the area EPS operator's distribution system without prior written permission to operate authorization from the area EPS operator. The area EPS operator shall provide such authorization within 3 business days from when the area EPS operator receives the *Certificate of Completion* and notification the interconnection member has complied with all applicable parallel operations requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.

8.6. Continual Compliance

The interconnection member shall be fully responsible to operate, maintain, and repair the DER as required to ensure that it complies at all times with the interconnection standards to which it has been certified. The interconnection member shall also operate its DER system in compliance with the area EPS operator's technical requirements version listed in the executed *Uniform Contract* or *Interconnection Agreement*. The area EPS operator may periodically inspect, at its own expense, the operation of DER system as it relates to power quality, thermal limits, and reliability. Failure by the interconnection member to remain in compliance with the technical requirements will result in the DER system disconnected from the area EPS operator's distribution system.

8.7. Disconnection of DER

The area EPS operator has the right to disconnect the DER in the event of the following:

- Does not continue to follow and maintain the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547 settings approved by the area EPS operator, as indicated by the adopted technical requirements.
- Does not meet all the requirements of the *Simplified Process*.
- Refuses to sign either the *Interconnection Agreement* or the area EPS operator's *Uniform Contract*.

The area electric power system (EPS) operator may temporarily disconnect the distributed energy resource (DER) upon the following conditions:

- For scheduled outages upon reasonable notice.
- For unscheduled outages or emergency conditions.
- If the DER does not operate in the manner consistent with the Simplified Process.

The area EPS operator shall inform the interconnection member in advance of any scheduled disconnections or, as reasonable, after an unscheduled disconnection.