

Western Carolina University (WCU) Standards to Interconnect a Photovoltaic Generation Facility

A person or entity, herein known as “Supplier”, installing a solar photovoltaic (PV) facility with the intent to interconnect with the Western Carolina University’s distribution grid must contact and receive approval to interconnect from the WCU. This document sets forth the “Interconnection Standard (s)” established by the WCU that must be met by the Supplier to install the photovoltaic generator. The WCU expressly reserves the right to change this Interconnection Standard from time-to-time.

Any Customer installing renewable generation must submit an application, which is called the Application to Interconnect a Photovoltaic (PV) Solar Panel Generating Facility (“Application”). Upon receipt and approval of the Application and prior to interconnection, the Supplier’s solar PV system must be verified by the Western Carolina University personnel as meeting the Interconnection Standard(s). The Supplier will further be required to enter into a written Interconnection Agreement with WCU, which specifies the installation and operating requirements to ensure that safety and system reliability will not be compromised.

Requirements for Interconnection

Requirements for Interconnection: The Supplier understands and agrees that it must furnish or provide verification of the following before interconnection to the WCU’s electrical system can be completed:

- If the solar PV facility is equipped with a voltage inverter, that inverter must have been manufactured, installed, and shall be operated in compliance with Underwriters’ Laboratory (UL) standard 1741 for distributed generation systems. The inverter must also have been identified and listed as “Utility Interactive.”
- The solar PV facility equipment must comply with the National Electric Code (NEC) and all applicable local codes (latest editions).
- The solar PV facility must have been inspected and approved by an electrical inspector licensed to work within Western Carolina University See list of applicable standards set forth in the attached PV Interface Criteria.
- Supplier must provide a copy of property deed verifying Customer’s ownership of the property on which the PV system is installed.
- The solar PV has been installed, operated, and maintained in accordance with the manufacturer’s, government and industry standards and specifications.
- The Supplier shall provide WCU a one-line drawing of the solar PV inverter wiring.
- Supplier shall furnish a properly executed certificate of insurance to WCU clearly showing the required coverage and any exclusions applicable to such coverage. For a non-residential Customer the minimum coverage shall be comprehensive general liability insurance with coverage at least \$300,000 per occurrence, and for a residential Customer the minimum coverage shall be at a standard homeowner’s insurance policy with liability coverage in the amount of at least \$100,000 per occurrence. This insurance shall be primary for all purposes, and shall name the WCU as additional insured. The WCU reserves the right to refuse to establish or continue the

interconnection of the Customer's Generator with the WCU's system if such insurance is not in effect.

Is this a solar induction type system? ___ Yes ___ No

If yes, the solar PV system must meet all requirements stated in the WCU Photovoltaic (PV) Interface Criteria, which is attached to and is part of this Interconnection Standard.

If no, please contact the WCU so WCU may investigate if other interconnection standards need to apply.

The Supplier agrees to provide WCU with any additional information required to complete the interconnection.

The Supplier further agrees that the solar PVs metering point shall be designed, installed, operated, and maintained in accordance with:

1. The guidelines and specifications set forth in the Application and this Interconnection Standard
2. WCU's Service Regulations

Customer acknowledges receiving copies of these documents: ___ Yes ___ No

Customer Understands and Agrees

- Tests of the Customer's solar PV system shall be documented by the installer so as , or their qualified designated representative so as to insure that the system is installed and meets the WCU's guidelines and requirements. WCU reserves the right to witness testing of the system.
- Supplier understands and agrees that Supplier is responsible for reimbursing the WCU for costs the WCU incurs for having an electrical engineer test (to be completed by an electrical engineer or licensed electrician) the solar PV facility. These tests shall be successfully completed in accordance with the manufacturer's published recommendation prior to interconnection to WCU's distribution system. Maintenance to the solar PV system shall also be performed in accordance with the manufacturer's published maintenance procedures.
- The accepted Application is for the original applicant only and may not be transferrable to future owners or operators.
- If the solar PV facility is sold, the new owners/operators must submit a new Application to the WCU. The initial owner/operator assumes the responsibility of ensuring any new owner/operator is aware it must re-apply for interconnection to the WCU electrical system. If the initial owner so chooses, it can also dismantle the solar PV facility and provide evidence that the solar PV system has been removed or disabled so as to prevent future use by any new entity.
- Upon acceptance and approval of an application to interconnect, the WCU will advise the Customer of any specific interconnection requirements and costs to interconnect to the WCU's electrical system. Supplier understands and agrees that payment of these costs must be made prior to WCU making the

interconnection. Supplier further understands it must enter into an Interconnection Agreement with WCU before interconnection can be completed. Supplier further understands that the actual interconnection will not be made until all requirements have been satisfied.

- The Supplier understands and agrees it is liable for and shall bear any costs associated with any power quality, reliability, safety issues or problems created by the interconnection and operation of its solar PV system at any time.
- Supplier also understand it is prohibited from altering the accepted design of the solar PV system without submitting a new “Application to Interconnect a Photovoltaic (PV) Solar Panel Generating Facility ” and obtaining new approval from the WCU.
- WCU reserves the right to at any time, in its discretion, to amend or modify this Interconnection Standard and other aspects of its solar PV facility interconnection standards.
- As the Supplier, , I hereby certify that to the best of my knowledge, all of the information provided is true and correct and that the solar PV system will comply with the WCU’s Interconnection Standard (s). I also authorize WCU to contact the manufacturer, installer, or any other party associated with the installation, as may be necessary to process my interconnection application and insure compliance with the WCU Interconnection Standard (s).

WCU agrees to pay the Customer for all power generated that is delivered to the WCU system according to the WCU’s solar PV rate schedule selected by the Customer

Important

Solar PV projects subject to this Interconnection Standard are also subject to requirements imposed under N.C. General Statutes 62-110.1(g) to report the proposed construction of a renewable generating facility to the North Carolina Utilities Commission (“NCUC”) before construction begins. NCUC Rule R8-65 requires the Supplier-owner to provide a copy of the report to the WCU before WCU will enter into an Interconnection Agreement.

Solar PV System

Owner’s Signature: _____ Date: _____

If Application is mailed, please mail to:

Ms. Angie Johnson
Business Officer
Western Carolina Power
3344 Old Cullowhee Rd
Cullowhee, NC 28723

WCU Status of Application

Date of Application Rec'd: May 23, 2024 Application Approved: X Yes No

Reviewed by: Joe Walker, PE
Associate Vice Chancellor for Facilities Management
Western Carolina University

If no, specify reason (s):

Applicant notified on: June 10, 2024 (via email)

By: Angie Johnson
Business Officer
Western Carolina Power

**Western Carolina University
Cullowhee, North Carolina
Photovoltaic (PV) Interface Criteria**

WCU supports the development of renewable resources for generation of electric power. In order to maintain current levels of safety and power quality for the general public, electric system employees and customers, certain criteria must be applied to all alternative sources of electric power. Specific criteria applying to photovoltaic solar panel (PV) installations are as follows:

- Owners of PV systems shall obtain, and retain in effect as long as the PV system is interconnected, comprehensive general liability insurance with limits of at least \$100,000 per occurrence for residential consumers and \$300,000 per occurrence for non-residential consumers which protects the owner from claims for bodily injury and/or property damage. This insurance shall be primary for all purposes, and shall name the WCU as additional insured. The owner shall provide certificates evidencing this coverage as required by WCU. WCU reserves the right to refuse to establish or to continue the interconnection of the PV system if such insurance is not in effect.
- All PV installations must be connected to WCU's electric system through a separate meter with only the PV system connected to the sources side of the PV interconnection meter.
- All PV systems must comply with **IEEE Standard 1547** "IEEE for Interconnecting Distributed Resources with Electric Power Systems."
- All PV systems must comply with **IEEE Standard 1547.1** "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems."
- All PV equipment must comply with the requirements of and be labeled under **Underwriters Laboratories Standard 1741 "Inverters, Converters, Controllers, and Interconnection Systems Equipment for Use With Distributed Energy Resources."**
- All PV systems must comply with IEEE Standard **1547.3** "IEEE P1547.3 Draft: Guide for Monitoring, Information Exchange, and Control of Distributed Resources Interconnected with Electric Power Systems."
- All PV installations must comply with **IEEE Standard 929** "IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems."
- All PV installations shall be made in accordance with the National Electrical Code (**NFPA 70**), latest published edition. Specific compliance with Article 690 and Article 705 is required. Installations shall be inspected and approved by the WCU.
- All PV installations are subject to review and testing by WCU prior to connection and at subsequent time of their choosing.

- PV systems shall not interfere with the power quality of any customer of WCU's distribution system. PV systems found to interfere with utility industry-accepted power quality standards will be disconnected from the system.
- All PV installations shall have a service disconnect installed immediately adjacent to the meter for the PV system. The disconnect shall be fully accessible to and operable by WCU's personnel at all times. The disconnect shall include provisions for locking in the open position. The disconnect shall be labeled in accordance with **NEC 705.10**.
- All interconnected PV systems shall be non-islanding. Systems found to produce voltage when disconnected from the electric distribution system will be disconnected without notice and will remain disconnected until installations are brought into compliance with specified standards.
- WCU will design and install reasonable and practical modifications to the electric distributions system to allow the interconnection of PV resources which would otherwise interfere with power quality delivered to other connections. In such cases, the PV system owner shall make an advance payment to WCU in an amount equal to the costs of the required facility modifications.
- All PV systems shall operate within the range of 0.90 lead to 0.90 lag power factor.