

Wisconsin Electric Cooperative DER Application Form



A Touchstone Energy® Cooperative 

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INSTRUCTIONS

SUBMIT THIS FORM DIRECTLY TO YOUR ELECTRIC COOPERATIVE

Notice: This form must be completed and submitted with fees established in Table III of the Interconnection Requirements of Wisconsin Electric Cooperatives (IRWEC), which are also shown below. Personal information collected will be used for administrative purposes only.

This application form is for interconnection to the electric distribution system of distributed energy resource (DER) systems sized up to 15 megawatts (MW) alternating current (AC) and associated equipment in compliance with the IRWEC.

If a DER Facility has an interconnection agreement but has simply changed ownership, do not fill out this form. Fill out “Change of Ownership Form for DER Systems.”

Cooperative DER Fee Schedule					
Category	Export Capacity	Application Review Fee	Engineering Review Fee	Distribution System Study	Commissioning Fee
1	20 kW or less	\$300	Cost based	Cost based	\$150
2	Greater than 20 kW to 200 kW	\$300 + \$10/kW	Cost based	Cost based	\$250
3	Greater than 200 kW to 1	\$2,000 + \$2/kW	Cost based	Cost based	\$1,000
4	Greater than 1 MW to 15 MW	\$4,000 + \$0.50/kW	Cost based	Cost based	\$2,500

An applicant seeking to interconnect a distributed energy resource facility to the distribution system of an electric cooperative shall maintain liability insurance equal to or greater than the amounts stipulated in the Table below, per occurrence.

Minimum Liability Insurance Coverage		
Category	Generation Capacity	Minimum Liability Insurance Coverage
1	20 kW or less	\$300,000
2	Greater than 20 kW to 200 kW	\$1,000,000
3	Greater than 200 kW to 1 MW	\$2,000,000
4	Greater than 1 MW to 15 MW	Negotiated

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COLORED SECTIONS OF THIS FORM CORRESPOND WITH DIFFERENT SYSTEM TYPES: SOLAR WIND STORAGE GENERATORS - COMPLETE ALL NON-HIGHLIGHTED SECTIONS AND ANY HIGHLIGHTED SECTIONS THAT APPLY

1. APPLICANT CONTACT INFORMATION

Last Name	First Name	Middle Name	
Company (If Applicable)	Representative (If Applicable)	Title	
Street Address	City	State	County
Primary Phone Number	Additional Emergency Phone	Email Address	

2. LOCATION OF THE DER SYSTEM

Street Address	City	State	Zip Code
Primary Phone Number	Additional Emergency Phone	Electric Service Account No.	
Meter Number	Latitude – Longitude (Optional)	County	

Does this application relate to a change or modification of an existing system?

If there is already generation at the point of interconnection, this is a modification, and the total export capacity kW in alternating current at this location (existing plus addition) shall be used within this application.

Yes, this is a modification No, there is no generation currently at this point of interconnection

3. MEMBER SERVICE TYPE

Residential Farm Commercial Industrial Other (list below)

4. APPLICANT'S OWNERSHIP INTEREST IN THE DER SYSTEM

Owner Co-Owner Other (list below)

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5. PRIMARY INTENTION OF DER SYSTEM

- Net Metering Certified Qualifying Facility under PURPA (Public Utility Regulatory Policies Act of 1978)
 Offset load, non-export of power Other (describe below)
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6. TYPE OF INTERCONNECTION

- Parallel Operation (operation for more than 100 milliseconds while connected to distribution system)
 Momentary parallel operation (less than or equal to 100 millisecond connection) or isolated operation/open transition

7. ELECTRICITY USE, PRODUCTION, AND PURCHASES

- a. Anticipated annual electricity consumption of the facility or site: _____ kWh/yr
b. Anticipated annual electricity production of the generation system: _____ kWh/yr
c. Anticipated annual electricity purchases from the Cooperative (a – b) _____ kWh/yr*

* Value will be negative if there are net sales to the Cooperative

8. PROJECT DESIGN AND ENGINEERING

Company

Representative

Title

Email Address

Phone Number

9. INSTALLING CONTRACTOR INFORMATION (IF KNOWN)

Company

Electrical Contractor's License Number

Representative

Title

Email Address

Phone Number

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10. GENERATION TYPE

Single Phase Three-Phase

If three-phase, specify configuration below:

3-wire delta 2-wire wye 4-wire grounded wye

11. IF PROTECTIVE EQUIPMENT IS SEPARATE FROM THE INVERTER, PROVIDE A PROTECTION AND CONTROL DIAGRAM ALONG WITH DATA SHEETS ON ALL RELATED EQUIPMENT IN ACCORDANCE WITH IRWEC. IF EQUIPMENT IS KNOWN, ATTACH MANUFACTURER SPECIFICATION DATA SHEETS

12. GENERATOR AND INVERTER INFORMATION – COMPLETE ONLY THE COLOR-CODED SECTIONS THAT APPLY

12.1 SOLAR GENERATOR AND INVERTER INFORMATION

_____ Watts
Solar Panel Manufacturer Rated Power Per Panel

_____ kW
Model Number Number of Panels System's Total AC Rating

Fixed Mount Single-axis tracking Dual-axis tracking Other (describe below)

_____ Tilt _____ Azimuth

_____ Inverter Manufacturer _____ Inverter Model Number
_____ min. _____ max.
Inverter Maximum Nameplate AC Rating Volts Power Factor Adjustment Range

_____ Total Number of Inverters _____ Certifications (e.g. UL)

12.1.A – INTERCONNECTION DISCONNECT SWITCH SHORT CIRCUIT CURRENT SPECIFICATIONS

a. Total short circuit current contribution of the generating system (at point of interconnection) in amps:

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

b. Load break capability rating of disconnection device in amps (must be equal to or greater than part a)

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

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12.1.B – IF APPLICABLE – 2ND TYPE OF SOLAR INVERTER

Inverter Manufacturer	Inverter Model Number
	min. _____ max.
Inverter Maximum Nameplate AC Rating Volts	Power Factor Adjustment Range

Total Number of Inverters	Certifications (e.g. UL)
_____ kW	_____ kVA

System Total AC Rating*

12.1.C – INTERCONNECTION DISCONNECT SWITCH SHORT CIRCUIT CURRENT SPECIFICATIONS

a. Total short circuit current contribution of the generating system (at point of interconnection) in amps:

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

b. Load break capability rating of disconnection device in amps (must be equal to or greater than part a)

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

12.2 WIND GENERATOR AND INVERTER INFORMATION

Wind Turbine Manufacturer

Model Number	Number of Turbines
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Generator Technology: Synchronous Induction Dually-Fed Induction
 Power Electronic Converter Other (specify below)

_____ kW	_____ mph
Rated Power of Each Turbine	At Average Wind Speed
_____ kW	_____ mph
Maximum Power of Each Turbine	At Maximum Wind Speed

Inrush (Startup) Current – Induction Machines Only _____ Amps

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12.2.A – IF APPLICABLE

Inverter Manufacturer		Inverter Model Number	
		_____ min.	_____ max.
Inverter Maximum Nameplate AC Rating	Volts	Power Factor Adjustment Range	

Total Number of Inverters		Certifications (e.g. UL)	
_____ kW		_____ mph	
Rated Power of Each Turbine		At Average Wind Speed	
_____ kW		_____ mph	
Maximum Power of Each Turbine		At Maximum Wind Speed	
Inrush (Startup) Current – Induction Machines Only		_____ Amps	

12.2.B – INTERCONNECTION DISCONNECT SWITCH SHORT CIRCUIT CURRENT SPECIFICATIONS

a. Total short circuit current contribution of the generating system (at point of interconnection) in amps:

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

b. Load break capability rating of disconnection device in amps (must be equal to or greater than part a)

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

12.3 ENERGY STORAGE SYSTEM INFORMATION (continued on next page)

Energy Storage System Manufacturer

Energy Storage System Model Name and/or No.	Number of Energy Storage Units
_____ kW (DC)	_____ kWh
Nameplate Rating (Per Unit)	Nameplate Capacity (Per Unit)

Energy Storage Type: Lithium-ion battery Flow battery (specify below)
 Lead-acid battery Other (specify below)

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12.3 ENERGY STORAGE SYSTEM INFORMATION (Continued)

Control System Manufacturer _____

Controller Model _____

TOTAL ENERGY STORAGE SYSTEM RATINGS:

_____ kW (DC) _____ kVA _____ kWh _____
Total Nameplate Rating Total Energy Capacity System Voltage System Frequency

_____ kW (DC) _____ kVA _____ kW (DC) _____ kVA
Maximum Charging Power Maximum Discharging Power

_____ kW (AC) _____ kWh (AC) _____ kW (AC)
ESS Maximum Continuous Output ESS Maximum Usable Energy ESS Peak Output

_____ % _____ hours
Maximum Depth of Discharge Maximum Duration at Maximum Discharge (C Rate)

Certifications (e.g. UL): _____

Is a generation source included in the DER facility at this point of interconnection? Yes No

If yes, what type? _____

12.3.A – OPERATING MODES

Operating Modes Available _____

Operating Modes Enabled _____

Firmware Version _____

Will the system export energy to the grid? Yes No

Will the system charge from the grid? Yes No

If not, what generation source charges the energy storage system? _____

Location of transfer switch? Integrated with inverter External

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12.3.B – INTERCONNECTION DISCONNECT SWITCH SHORT CIRCUIT CURRENT SPECIFICATIONS

a. Total short circuit current contribution of the generating system (at point of interconnection) in amps:

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

b. Load break capability rating of disconnection device in amps (must be equal to or greater than part a)

_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

12.4 ENGINE/GENERATOR INFORMATION (Applies only if utilizing closed-transition switch)

Engine/Generator Manufacturer

Model Number

Number of Units Installed

Generation Type: Synchronous Induction Other (provide attachments to describe)

INTERFACE INFORMATION: GENERATOR SYNCHRONIZER

Manufacturer

Switch Rating

kVA

Model No.

Automatic Synchronizer Manual Synchronizer

Fuel Source: Diesel Petroleum Natural Gas Biogas Other (specify below)

GENERATOR MAXIMUM RATINGS

_____ kW _____ kVA _____ Volts _____ Amps _____ Hz _____ Power Factor %

Power Factor Adjustment Range _____ min _____ max

Neutral Grounding System Used: Ungrounded Grounded

Grounding Impedance _____ Z

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For Synchronous Generators (kVA Base)

For Induction Generators (kVA Base)

Synchronous Resistance _____ (X_d %) Locked Rotor Current _____ Amps
Transient Resistance _____ (X_d' %) Stator Leakage Resistance _____ (R_s %)
Sub-transient Resistance _____ (X_d'' %) Rotor Resistance _____ (R_r %)
Zero Sequence Resistance _____ (X_0 %) Rotor Leakage Resistance _____ (R_l %)
Negative Sequence Resistance _____ (X_1 %)

For induction machines, what is the inrush (startup) current _____ Amps

If the generator is > 1 MW (Category 4) provide the following:

M1 _____ (momentum constant) Stator Reactance _____ (X_s %)
M2 _____ (momentum constant) Rotor Reactance _____ (X_r %)
Field Voltage _____ Volts Magnetizing Reactance _____ (X_m %)
Field Current _____ Amps Short Circuit Reactance _____ (X_d %)

If the system includes more than one type of engine/generator, include additional copies of this page as needed

12.4.A – SYSTEM TOTALS

_____ kW _____ kVA _____ Volts _____ Amps _____ Hz _____ Power Factor %
Total inrush (startup) current _____ Amps

12.3.B – INTERCONNECTION DISCONNECT SWITCH SHORT CIRCUIT CURRENT SPECIFICATIONS

a. Total short circuit current contribution of the generating system (at point of interconnection) in amps:
_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

b. Load break capability rating of disconnection device in amps (must be equal to or greater than part a)
_____ Single Phase _____ Three-Phase Symmetrical _____ Asymmetrical

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13. ESTIMATED CONSTRUCTION START DATE

14. REQUESTED IN-SERVICE DATE

15. COST OF SYSTEM

16. LIABILITY INSURANCE

Carrier	Limits
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Agent Name	Phone Number	Email Address
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Self-Insured (e.g., if a local unit of government)

Note: *Minimum liability insurance coverages are given within Table I in the IRWEC document (also shown on page 1 of application)*

Note: *Applicant must also provide Proof of Insurance as an Attachment*

17. DESIGN REQUIREMENTS

a. Has the proposed paralleling equipment (such as an inverter) been certified by a nationally recognized testing laboratory? (e.g. UL 1741)? Yes No

b. If certified, list the applicable certifications (e.g. UL 1741)

c. If not certified, does the proposed DER meet the requirements defined in the respective Cooperative's Technical Specifications Manual (TSM)? Yes No

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18. REQUIRED ATTACHMENTS

- Technology-based attachments and related manufacturer specification data sheets.
- One-line schematic diagram of the system that includes:
 - a. Generator(s), inverter(s), battery(ies), if applicable, and their nameplate capacities.
 - b. Conductor and conduit size, type, and length.
 - c. Point where the DER facility is electrically connected to the member’s electrical system.
 - d. Method of interconnection.
 - e. Point of common coupling.
 - f. Production meter, if required by the Cooperative.
 - g. Lockable interconnection disconnect switch.
 - h. RSD such as a BESS emergency shutdown switch.
 - i. Method of grounding, including generator and transformer ground connections.
 - j. Protection functions and systems.
- Site plan showing the location of major equipment, electrical service entrance, electric meter, interface equipment, interconnection disconnect switch, adjoining street name, and the street address of the DER facility.
- Proof of insurance per Section 16.
- Proof of equipment certification or other compliance with requirements described in Section 17.

18. APPLICANT AND DESIGNER/ENGINEER SIGNATURE

To the best of my knowledge, all the information provided in this Application Form is complete and correct.

Applicant Signature

Date

Project Designer/Engineer Signature

Date

Send completed form to David Chavie at
dchavie@piercepepin.coop.