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

Wisconsin Electric Cooperative DER Application Form

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)

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

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

Solar Panel Manufacturer _____ Rated Power Per Panel _____ Watts

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

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

Tilt _____ Azimuth _____

Inverter Manufacturer _____ Inverter Model Number _____

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

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

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

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

12.2.A – IF APPLICABLE

Inverter Manufacturer _____ Inverter Model Number _____

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

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

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

Maximum Power of Each Turbine _____ kW _____ mph 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 _____

Nameplate Rating (Per Unit) _____ kW (DC) _____ kWh Nameplate Capacity (Per Unit)

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

_____

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

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

_____ kVA

Manufacturer Switch Rating

_____

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

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

13. ESTIMATED CONSTRUCTION START DATE

14. REQUESTED IN-SERVICE DATE

15. COST OF SYSTEM

16. LIABILITY INSURANCE

Carrier Limits

Agent Name Phone Number Email Address

☐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

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.C onductor and conduit size, type, and length.
c.P oint 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