

If capacity addition or Material Modification to existing facility, please describe:

Will the DER be used for any of the following?

Net Metering? Yes ___ No ___

To Supply Power to the Interconnection Customer? Yes ___ No ___

To Supply Power to Area EPS? Yes ___ No ___

Requested Point of Common Coupling (at a minimum, provide: 1) an address or nearest cross-section and 2) GPS coordinates or an annotated aerial map):

Installed DER System Cost (before incentives): _____

Interconnection Customer's Requested In-Service Date: _____

Distributed Energy Resource Information

Data applies only to the Distributed Energy Resource not the Interconnection Facilities.

Energy Source:

- Solar Wind Storage Hydro Type (e.g. Run-of-River):
 Diesel Natural Gas Fuel Oil Other (state type, e.g. solar + wind + storage):

Prime Mover:

- Photovoltaic Microturbine Reciprocating Engine Fuel Cell
 Gas Turbine Steam Turbine Wind Turbine Other (state type):

Type of Generator: Inverter Synchronous Induction

DER Nameplate Rating (in kWac): _____ DER Nameplate kVAR: _____

Interconnection Customer or
Customer-Sited Load
(in kW, if none, so state): _____ Typical Reactive Load
(if known): _____

Maximum Physical Export
Capability Requested (in kW): _____

Export Capability Limited (e.g., through use of a control system, power relay(s), or other similar device settings of adjustments): Yes No

If yes, describe: _____

List components of the Distributed Energy Resource Certified Equipment:

	Equipment Type	Certifying Entity
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

Is the prime mover compatible with the certified protective relay package? Yes No

Distributed Energy Resource Manufacturer,
Model Name & Number: _____

Version Number: _____

Nameplate Rating in kW: (Summer): _____ (Winter): _____

Nameplate Rating in kVA: (Summer): _____ (Winter): _____

Individual Generator Power Factor

Rated Power Factor: Leading: _____ Lagging: _____

Total Number of Distributed Energy Resources to be interconnected pursuant to this

Interconnection Application: _____ Single Phase Three Phase

Inverter Manufacturer, Model
Name & Number (if used): _____

List of adjustable set points for the protective equipment or software: _____

Note: A completed power systems load flow data sheet must be supplied with the Interconnection Application.

Distributed Energy Resource Characteristic Data (for inverter-based machines)

Max design fault contribution current: _____ Instantaneous or _____
 Harmonic characteristics: _____
 Start-up requirements: _____

Distributed Energy Resource Characteristic Data (for rotating machines)

RPM frequency: _____ *Neutral Grounding Resistor (if applicable): _____

Synchronous Generators:

Direct Axis Synchronous Reactance, X_d :	_____	Zero Sequence Reactance, X_0 :	_____
Direct Axis Transient Reactance, X'_d :	_____	KVA Base:	_____
Direct Axis Subtransient Reactance, X''_d :	_____	Field Volts:	_____
Negative Sequence Reactance, X_2 :	_____	Field Amperes:	_____

Induction Generators:

Motoring Power (kW):	_____	Exciting Current:	_____
I ² t or K (Heating Time Constant):	_____	Temperature Rise:	_____
Rotor Resistance, R_r :	_____	Frame Size:	_____
Stator Resistance, R_s :	_____	Design Letter:	_____
Stator Reactance, X_s :	_____	Reactive Power Required In Vars (No Load):	_____
Rotor Reactance, X_r :	_____	Reactive Power Required In Vars (Full Load):	_____
Magnetizing Reactance, X_m :	_____	Total Rotating Inertia, H:	_____

Per Unit on kVA Base

Short Circuit
Reactance, Xd''': _____

Note: Please contact Minnesota Power prior to submitting the Interconnection Application to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

Interconnection Facilities Information

Will a transformer be used between the DER and the Point of Common Coupling? Yes No

Will the transformer be provided by the Interconnection Customer? Yes No

Transformer Data (If Applicable, for Interconnection Customer-Owned Transformer):

Is the transformer: Single Phase Three Phase

Size (kVA): _____ Transformer Impedance (%): _____ on kVA Base:

If Three Phase:

Transformer Primary:	Volts: _____	Delta: _____	Wye: _____	Wye Grounded: _____
Transformer Secondary:	Volts: _____	Delta: _____	Wye: _____	Wye Grounded: _____
Transformer Tertiary:	Volts: _____	Delta: _____	Wye: _____	Wye Grounded: _____

Transformer Fuse Data (If Applicable, for Interconnection Customer-Owned Fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Interconnecting Circuit Breaker (if applicable):

Manufacturer: _____ Type: _____

Load Rating (Amps): _____ Interrupting Rating (Amps): _____ Trip Speed (Cycles): _____

Interconnection Protective Relays (If Applicable):

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

	Setpoint Function	Minimum	Maximum
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

If Discrete Components:

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
 Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
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 Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Current Transformer Data (If Applicable):

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Potential Transformer Data (If Applicable):

Manufacturer: _____

Type: _____ Accuracy _____ Proposed _____
Class: _____ Ratio _____
Connection: _____

Manufacturer: _____

Type: _____ Accuracy _____ Proposed _____
Class: _____ Ratio _____
Connection: _____

General Information

Enclose copy of site electrical one-line diagram showing the configuration of all DER equipment, current and potential circuits, and protection and control schemes. The one-line diagram shall include:

- Interconnection Customer name.
- Application ID (or, if applicable, Customer account number)
- Installer name and contact information.
- Install address- must match application address.
- Correct positions of all equipment, including but not limited to panels, inverter, and DC/AC disconnect. Include distances between equipment, and any labeling found on equipment. See Minnesota Technical Requirements.

This one-line diagram must be signed and stamped by a Professional Engineer licensed in Minnesota if the DER is larger than 50 kW (if uncertified) and 250 kW (if certified.)

Is One-Line Diagram Enclosed? Yes No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Distributed Energy Resource (e.g., USGS topographic map or other diagram or documentation). Is Available Documentation Enclosed? Yes No

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) _____

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes. Is Available Documentation Enclosed? Yes No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).
Are Schematic Drawings Enclosed? Yes No

Enclose copies of documentation showing site control (MN DIP Section 1.7)
Is Available Documentation Enclosed? Yes No

Disclaimer: Minnesota Power shall notify the Interconnection Customer with an opportunity to request a timeline extension (See MN DIP Section 1.8.2 and 5.2.3.). Failure by the Interconnection Customer to meet and request an extension as described in MN DIP Section 5.2.3 for a timeline outlined in the MN DIP could result in a withdrawn queue position and the need to re-apply. INITIAL: _____

Interconnection Customer Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Application is true and correct.

Interconnection Customer: _____ Date: _____

Send a completed and signed copy of this form with attachments to Minnesota Power at renewableprograms@mnpower.com or the address listed below. Send application fee to:

Minnesota Power
Attn: Renewable Programs
30 W. Superior St.
Duluth, MN 55802