Attachment 3: Interconnection Application Form

MINNESOTA DISTRIBUTED ENERGY RESOURCES

INTERCONNECTION APPLICATION

This form is for Distributed Energy Resources (DERs) that meets the eligibility of the Minnesota Interconnection Process (see Section 1.1) and are not eligible for consideration under the Section 2 Simplified Process.

This Application is considered complete when it provides all applicable and correct information required below. Additional technical data may be necessary prior to the system impact study process as described in 4.3.3, if applicable, but is not relevant to application completeness. The following additional information must be submitted with an application:

○ Single Line Diagram ○ Proof of Site Control (see Section 1.7) and Site Diagram ○ Specification Sheet(s)

A DER with an energy storage component must additionally complete Exhibit B For Energy Storage.

Application is for:

☐ New DER(s)

☐ Capacity addition or Material Modification to Existing DER (see MN DIP Glossary of Terms)

Select Review Process:

○ Fast Track Process

Confirm eligibility requirements at MN DIP Section 3.1

[For Certified Equipment, the processing fee shall be $100 + $1/kW. For non-certified DER, the processing fee shall be $100 + $2/kW.]

○ Study Process

Confirm eligibility requirements at MN DIP Section 4 Study Process.

[The processing fee shall be a deposit not to exceed $1,000 plus $2.00 per kW towards the cost of the first study under Section 4 Study Process.]

Additional fees or deposits shall not be required, except as otherwise specified in the MN DIP.

Interconnection Customer/Owner

Name: _____

Account Number: _____ Meter Number: _____

Mailing Address: _____

Telephone: _____ Email: _____

[If different,] Application Agent/Company: _____

Telephone: _____ Email: _____

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 kW*ac*): _____ 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 RMS? _____

Harmonic characteristics: _____

Start-up requirements: _____

Distributed Energy Resource Characteristic Data (for rotating machines)

RPM _____ *Neutral Grounding _____

frequency: 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:	
I22t or K (Heating Time Constant):		Temperature Rise:	
Rotor Resistance, Rr:		Frame Size:	
Stator Resistance, Rs:		Design Letter:	
Stator Reactance, Xs:		Reactive Power Required In Vars (No Load):	
Rotor Reactance, Xr		Reactive Power Required In Vars (Full Load):	
Magnetizing Reactance, Xm:		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:_____
Manufacturer:_____	Type:____	Style/Catalog No.:_____	Proposed Setting:_____
Manufacturer:_____	Type:____	Style/Catalog No.:_____	Proposed Setting:_____
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 Class:	_____	Proposed Ratio Connection:	_____
Manufacturer:	_____				
Type:	_____	Accuracy Class:	_____	Proposed 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: _____