

**Scenic Rivers Energy Cooperative Distributed Energy Resource (DER)
40 kW Or More Interconnection Application Form**

All Interconnection Member requests to interconnect a Distributed Energy Resource (DER) with Scenic Rivers Energy Cooperative (Cooperative) electric distribution system, must complete and submit this Interconnection Application Form along with a \$527.50 non-refundable Processing Fee. Each proposed DER interconnection requires a separate Interconnection Application Form and Processing Fee.

Following the receipt of the Interconnection Application Form and Processing Fee, the Cooperative will determine if the application is complete. If not complete, the Cooperative will return the Interconnection Application Form to the applicant indicating which additional items are needed to process the application. Based on the proposed DER size, type, and interconnection location with the electric distribution system, the Cooperative will determine if the application will proceed to a Fast Track process or a System Impact Study process.

Systems under 40kW - Fast Track

For applications that are less than 40 kW, the Interconnection Member shall submit \$527.50 with appropriate application to verify compliance with the Cooperative's DER Interconnection Standards.

Systems over 40 kW - Impact Study Process

For applications required to go through the System Impact Study process, the Interconnection Member shall submit a deposit of \$10,000 plus \$1 per kW-AC to fund the study. Any unused funds for the System Impact Study will be returned to the Interconnection Member.

Systems Exceeding Total Capacity

Any size system which exceeds the total capacity of the circuit for which it is a part of will require a System Impact Study.

Change in Ownership

If the Interconnection Application Form is submitted solely due to a transfer of ownership or change of control of the DER facility, the Interconnection Member shall submit a \$100 processing fee.

I. Interconnection Member Information

Legal Name of the Interconnection Member (*or, if an individual, individual's name*)

Name: _____

Contact Name: _____

Title: _____

E-mail Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Facility Location (*if different from above*)

Mailing Address: _____

City: _____ State: _____ Zip: _____

Alternative Contact Information/Owner/Lessor (if different from the Interconnection Member)

Contact Name: _____

Title: _____

Company: _____

E-mail Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Application is for:

- New DER facility
- Capacity change to a proposed or existing DER facility
- Change of ownership of a proposed or existing DER facility to a new legal entity
- Change of control of a proposed or existing DER facility of the existing legal entity

If capacity addition to an existing DER Facility, please describe: _____

Will the Generating Facility be used for any of the

following? To supply power to the Interconnection Yes No

To supply power to Scenic Rivers Energy Coop Yes No

To supply power to others Yes No

(NOTE: The following is to be completed for a new DER facility or a capacity change to a proposed or existing DER facility.)

Requested point of interconnect: _____

Requested in-service date: _____

For installations at locations with existing electric service to which the proposed DER Facility will interconnect, provide:

Existing account number: _____

Service address: _____

Billing Address (if different from Service Address): _____

II. General DER Information

Information applies only to the DER Facility, not the Interconnection Facilities.

Prime Mover:

- Photovoltaic (PV) Fuel Cell Reciprocating Engine
- Gas Turbine Steam Turbine Micro-turbine
- Battery Other: _____

Energy Source:

- | | | |
|---|---|--|
| <u>Renewable</u> | <u>Renewable</u> | <u>Non-Renewable</u> |
| <input type="checkbox"/> Solar – Photovoltaic | <input type="checkbox"/> Hydro – Run of River | <input type="checkbox"/> Fossil Fuel – Diesel |
| <input type="checkbox"/> Solar – Thermal | <input type="checkbox"/> Hydro – Storage | <input type="checkbox"/> Fossil Fuel – Natural Gas |
| <input type="checkbox"/> Biomass – Landfill Gas | <input type="checkbox"/> Wind | <input type="checkbox"/> Fossil Fuel – Oil |
| <input type="checkbox"/> Biomass – Digester Gas | <input type="checkbox"/> Geothermal | <input type="checkbox"/> Fossil Fuel – Coal |
| <input type="checkbox"/> Biomass – Solid Waste | <input type="checkbox"/> Other/Specify _____ | <input type="checkbox"/> Other/Specify _____ |
| <input type="checkbox"/> Biomass – Wood | | |

Energy Reuse

- Battery Storage

Type of DER: Synchronous Induction DFIG Inverter

Total DER nameplate output rating: _____kW-AC _____kW-DC _____kVAR

Is the DER facility package certified? Yes No

List components of the DER Facility equipment package that are currently certified:

	Quantity	Equipment Type	Certification
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

(NOTE: The following is to be completed for a DER facility package that is not certified or has a nameplate output rating greater than 40 kW. Otherwise, please proceed to Section VIII.)

III. Load and Export Information

Interconnection Member or member-side peak load: _____kW-AC (state if none)
Interconnection Member or member-side minimum load: _____kW-AC (state if none)
Interconnection Member DER auxiliary load: _____kW-AC (state if none)
Expected reactive load (if known): _____kVAR
Maximum export capabilities requested: _____kW-AC

IV. Inverter-Based DER Facility Characteristics (if applicable)

Solar Panel Information

Quantity	Manufacturer	Model
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

Individual Photovoltaic Panel

Current at maximum power point (I_{mpp}): _____Amps
Voltage at maximum power point (V_{mpp}): _____Volts
Short-circuit current in standard test conditions (I_{sc}): _____Amps
Open-circuit voltage in standard test conditions (V_{oc}): _____Volts
Short-circuit current temperature coefficient (α_{sc}): _____%/°C
Open-circuit voltage temperature coefficient (β_{oc}): _____%/°C
Normal operating cell temperature (NOCT): _____°C
Reference ambient temperature (T_a ref): _____°C
Standard test condition temperature (T_{stc}): _____°C
Standard test condition irradiance (G_{stc}): _____W/m²

Total Photovoltaic Array

Fixed Tilt Array Single Axis Tracking Array Double Axis Tracking Array
Number of photovoltaic panels in series (N_s): _____
Number of photo voltaic panels in parallel (N_p): _____
DC voltage of array: _____Volts-DC
Rated power of array: _____kW-DC

Inverter Information

Line-commutated Self-commutated

Rated DC side voltage (Vdc): _____ Volts

DC side capacitor: _____ μ F

AC side inverter rating: _____ kVA

AC side active power rating: _____ kW

AC side reactive power rating: _____ kVAR

AC side minimum power factor rating: _____ %

Internal coupling resistance (R): _____ Ω

Internal coupling inductance (L): _____ H

Maximum instantaneous fault contribution per inverter: _____ kA @ _____ Volts

Maximum instantaneous fault contribution of installation: _____ kA @ _____ Volts

Maximum RMS fault contribution per inverter: _____ kA @ _____ Volts

Maximum RMS fault contribution of installation: _____ kA @ _____ Volts

Harmonic characteristics: _____

Inverter Modeling Parameters (valid for initial 2 to 6 cycles)

Inverter equivalent MVA base: _____ MVA

Short-circuit equivalent positive sequence resistance (R_1): _____ p.u.

Short-circuit equivalent positive sequence reactance (X_1): _____ p.u.

Short-circuit equivalent negative sequence resistance (R_2): _____ p.u.

Short-circuit equivalent negative sequence reactance (X_2): _____ p.u.

Short-circuit equivalent zero sequence resistance (R_0): _____ p.u.

Short-circuit equivalent zero sequence reactance (X_0): _____ p.u.

V. Rotating Machine DER Facility Characteristics (if applicable)

Synchronous Machines

Equivalent MVA base: _____ MVA

Field voltage: _____ Volts

Field amperage: _____ Amps

Direct axis synchronous reactance, X_d : _____ p.u.

Direct axis transient reactance, X'_d : _____ p.u.

Direct axis subtransient reactance, X''_d : _____ p.u.

Negative sequence reactance, X_2 : _____ p.u.

Zero sequence reactance, X_0 : _____ p.u.

Induction Machines

Motoring power: _____ kW

Equivalent MVA base: _____ MVA

I²t or K (Heating time constant): _____

Rotor resistance, R_r: _____ p.u.

Stator resistance, R_s: _____ p.u.

Rotor reactance, X_r: _____ p.u.

Stator reactance, X_s: _____ p.u.

Magnetizing reactance, X_m: _____ p.u.

Short current reactance, X_d: _____ p.u.

Exciting current: _____ Amps

Required reactive power (No load): _____ kVAR

Required reactive power (Full Load): _____ kVAR

Total rotating inertia, H: _____ p.u.

VI. Interconnection Facilities Information *(if applicable)*

Will more than one transformer be used between the DER and the point of common coupling?

Yes No

(If yes, provide the below information for each transformer. The number of transformers must match the one-line diagram and transformer specification sheets.)

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

Transformer Data *(if supplied and Owned by Interconnection Member)*

Single-Phase Three-Phase

Size: _____ kVA

Impedance: _____ %

For three-phase transformers:

Primary Winding Voltage: _____ Volts

Delta Wye, grounded neutral (Co-op Standard) Wye, floating neutral

Secondary Winding Voltage: _____ Volts

Delta Wye, grounded neutral (Co-op Standard) Wye, floating neutral

Tertiary Delta Winding? Yes No

Transformer fuse data *(if applicable)*

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

VII. Additional Information

One-Line Diagram

Enclose site electrical one-line diagram showing the configuration of all DER Facility equipment, current and potential circuits, and protection and control schemes.

- Include the project owner's name, project name, project address, model numbers and nameplate sizes of equipment, including number and nameplate electrical size information for solar panels, inverters, wind turbines, disconnect switches, latitude and longitude of the project location, and tilt angle and orientation of the photovoltaic array for solar projects.
- Depict the metering arrangement required whether installed on the Member side of an existing meter or directly connected to the grid through a new or separate delivery point requiring a separate meter.
- List of adjustable set points for the protective equipment or software should be included on the electrical one-line diagram.
- Signed and sealed by a licensed Professional Engineer if the DER Facility is greater than 40 kW.

Is the one-line diagram enclosed? Yes No

Site Plan

Enclose site plan showing the physical location of the proposed DER and point of interconnection with the Cooperative.

- Indicate the latitude and longitude coordinates.
- Overlay on an aerial map.
- Included the proposed location of protective interface equipment on property.

Is a site plan enclosed? Yes No

Equipment Specifications

Include equipment specification information (product literature) for the solar panels and inverter(s) that provides technical information and certification information for the equipment to be installed with the application.

Are equipment specifications enclosed? Yes No

Protection and Control Schemes

- Enclose copy of any site documentation that describes and details the operation of the protection and control scheme.
- Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (*if applicable*)

Are protection and control documents and schematics enclosed? Yes No

VIII. Applicants Signature

All DER Interconnections must comply with the Cooperative's DER Interconnection Standards.

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

Interconnection Member

Signature: _____ Date: _____
(Authorized Agent of the Legal Entity)

Printed Name: _____