South Carolina Interconnection Request Application Form

INTERCONNECTION UTILITY INFORMATION

Utility: _____

Designated Utility Contact: _____

E-Mail Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

County: _____

Telephone (Day): _____ (Evening): _____

Fax: _____

Important Note: An Interconnection Request Application Form is considered complete when it provides all applicable and correct information required below.

PREAMBLE AND INSTRUCTIONS

An Interconnection Customer who requests a Public Service Commission of South Carolina jurisdictional interconnection must submit this Interconnection Request Application Form by hand delivery, mail, e-mail, or fax to the Utility. Your Utility may also allow you to complete your Interconnection Request Application Form by electronic enrollment on its website.

Request for: Fast Track Process _____ Study Process _____

(All Generating Facilities larger than 2 MW must use the Study Process.)

PROCESSING FEE OR DEPOSIT

Fast Track Process – Non-Refundable Processing Fees

- If the Generating Facility is larger than 20 kW but not larger than 100 kW, the fee is $250.
- If the Generating Facility is larger than 100 kW but not larger than 2 MW, the fee is $500.

Study Process – Deposit

If the Interconnection Request is submitted under the Study Process, whether a new submission or an Interconnection Request that did not pass the Fast Track Process, the Interconnection Customer shall submit to the Utility an Interconnection Facilities Deposit Charge of $10,000 plus $1 per kWAC inclusive of a $1000 fee to administer the Interconnection Request study process.

Change in Ownership – Non-Refundable Processing Fee

If the Interconnection Request is submitted solely due to a transfer of ownership or change of control of the Generating Facility, the fee is $50.

INTERCONNECTION CUSTOMER INFORMATION

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

Name: _____

Contact Name: _____

Title: _____

E-Mail Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

County: _____

Telephone (Day): _____ (Evening): _____

Fax: _____

Facility Location (if different from above)

Address: _____

City: _____ State: _____ Zip: _____

County: _____

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

Contact Name: _____

Title: _____

Office of Regulatory Staff Certificate Number (if applicable): _____

E-Mail Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

County: _____

Telephone (Day): _____ (Evening): _____

Fax: _____

Application is for:

- ❑ New Generating Facility
- ❑ Capacity Change to a Proposed or Existing Generating Facility
- ❑ Change of Ownership of a Proposed or Existing Generating Facility to a new legal entity
- ❑ Change of Control of a Proposed or Existing Generating Facility of the existing legal entity

If capacity addition to existing Generating Facility, please describe: _____

_____

_____

_____

Will the Generating Facility be used for any of the following?

Net Metering?	❑ Yes	❑ No
To Supply Power to the Interconnection Customer?	❑ Yes	❑ No
To Supply Power to the Utility?	❑ Yes	❑ No
To Supply Power to Others?	❑ Yes	❑ No

(If yes, discuss with the Utility whether the interconnection is covered by the SC Interconnection Standard.)

Requested Point of Interconnection: _____

Requested In-Service Date: _____

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

Local Electric Service Provider*: _____

Existing Account Number : _____

[*To be provided by the Interconnection Customer if the local electric service provider is different from the Utility]

Contact Name: _____

Title: _____

E-Mail Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

County: _____

Telephone (Day): _____ (Evening): _____

Fax: _____

GENERATING FACILITY INFORMATION

Data apply only to the Generating Facility, not the Interconnection Facilities.

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Prime Mover: Photovoltaic (PV) _____ Fuel Cell _____ Reciprocating Engine _____

Gas Turbine _____ Steam Turbine _____ Micro-turbine _____

Other _____

Energy Source:

Renewable	Renewable	Non-Renewable
❑ Solar – Photovoltaic	❑ Biomass – Other/Specify _____	❑ Fossil Fuel - Diesel
❑ Solar – thermal	❑ Hydro power – run of river	❑ Fossil Fuel - Natural Gas (not waste)
❑ Biomass – landfill gas	❑ Hydro power - storage	❑ Fossil Fuel - Oil
❑ Biomass – manure digester gas	❑ Hydro power – tidal	❑ Fossil Fuel – Coal
❑ Biomass – directed biogas	❑ Hydro power – wave	❑ Fossil Fuel – Other/Specify _____
❑ Biomass – solid waste	❑ Wind	❑ Other/Specify _____
❑ Biomass – sewage digester gas	❑ Geothermal	
❑ Biomass – wood	❑ Other/Specify _____	

Type of Generator: Synchronous _____ Induction_____ Inverter _____

Total Generator Nameplate Rating: kWAC _____ KwDC _____ kVAR_____

Interconnection Customer or Customer-Site Load: _____kWAC (If none, so state.)

Interconnection Customer Generator Auxiliary Load: _____ kWAC

Typical Reactive Load (if known): _____ kVAR

Maximum Physical Export Capability Requested: _____kWAC

(The maximum continuous electrical output of the Generating Facility at any time at a power factor of approximately unity as measured at the Point of Interconnection and the maximum kW delivered to the Utility during any metering period.)

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

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

Generator (or solar panel information)

Manufacturer, Model Name, & Quantity:_____

_____

Nameplate Output Power Rating in kWAC: _____Summer _____Winter

Nameplate Output Power Rating in kVA: _____Summer _____Winter

Individual Generator Rated Power Factor: _____Leading _____Lagging

Total Number of Generators in wind farm to be interconnected pursuant to this Interconnection Request (if applicable):_____ Elevation: _____

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

Note: The utility may request a completed Power Systems Load Flow data sheet be supplied as a supplement the Interconnection Request.

For solar projects provide the following information:

Latitude: _____ Degrees _____Minutes North

Longitude: _____ Degrees _____Minutes West

Orientation: _____ Degrees (Due South=180°)

Fixed Tilt Array ❑ Single Axis Tracking Array ❑ Double Axis Tracking Array ❑ Fixed Tilt Angle:_____Degrees

Impedance Diagram - If interconnecting to the Utility System at a voltage of 44- kV or greater, provide an Impedance Diagram. An Impedance Diagram may be required by the Utility for proposed interconnections at lower interconnection voltages. The Impedance Diagram shall provide, or be accompanied by a list that shall provide, the collector system impedance of the generation plant. The collector system impedance data shall include equivalent impedances for all components, starting with the inverter transformer(s) up to the utility level Generator Step-Up transformer.

Load Flow Data Sheet - If interconnecting to the Utility System at a voltage of 44-kV or greater, provide a completed Power Systems Load Flow data sheet. A Load Flow data sheet may be required by the Utility for proposed interconnections at lower interconnection voltages.

Excitation and Governor System Data for Synchronous Generators - If interconnecting to the Utility System at a voltage of 44-kV or greater, 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 required at lower interconnection voltages. A copy of the manufacturer's block diagram may not be substituted.

GENERATING FACILITY CHARACTERISTIC DATA (FOR INVERTER-BASED MACHINES)

Max design fault contribution current: _____ Instantaneous: ❑ or RMS: ❑

Harmonics Characteristics:_____

Start-up requirements:_____

INVERTER SHORT-CIRCUIT MODEL DATA

Model and parameter data required for short-circuit analysis is specific to each PV inverter make and model. All data to be provided in per-unit ohms, on the equivalent inverter MVA base.

Values below are valid for initial 2 to 6 cycles:

Inverter Equivalent MVA Base: _____ MVA
Short-Circuit Equivalent Pos. Seq. Resistance (R_1): _____ p.u.
Short-Circuit Equivalent Pos. Seq. Reactance (XL_1): _____ p.u.
Short-Circuit Equivalent Zero. Seq. Resistance (R_2) cycles: _____ p.u.
Short-Circuit Equivalent Neg. Seq. Reactance (XL_2), valid for initial 2 to 6 cycles: _____ p.u.
Special notes regarding short-circuit modeling assumptions: _____

_____

_____

_____

_____

_____

_____

_____

GENERATING FACILITY CHARACTERISTIC DATA (FOR ROTATING MACHINES)

RPM Frequency: _____

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

Synchronous Generators:

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.

KVA Base: _____

Field Volts: _____

Field Amperes: _____

Induction Generators:

Motoring Power (kW): _____

I_2^2t or K (Heating Time Constant):_____

Rotor Resistance, R_r: _____

Stator Resistance, R_s: _____

Stator Reactance, X_s:_____

Rotor Reactance, X_r: _____

Magnetizing Reactance, X_m:_____

Short Circuit Reactance, X_d: _____

Exciting Current: _____

Temperature Rise:_____

Frame Size: _____

Design Letter:_____

Reactive Power Required In Vars (No Load): _____

Reactive Power Required In Vars (Full Load):_____

Total Rotating Inertia, H:_____Per Unit on kVA Base

Note: Please contact the Utility prior to submitting the Interconnection Request to determine if the specified information above is required.

INTERCONNECTION FACILITIES INFORMATION

Will more than one transformer be used between the generator and the point of common coupling? Yes ❑ No ❑
(If yes, copy this section and provide the information for each transformer used. This information must match the single-line drawing and transformer specification sheets.)

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 Winding _____ Volts

❑ Delta ❑ WYE, grounded neutral ❑ WYE, ungrounded neutral Primary Wiring Connection

❑ 3-wire ❑ 4-wire, grounded neutral

Transformer Secondary Winding _____Volts

❑ Delta ❑ WYE, grounded neutral ❑ WYE, ungrounded neutral Secondary Wiring Connection

❑ 3-wire ❑ 4-wire, grounded neutral

Transformer Tertiary Winding _____ Volts

❑ Delta ❑ WYE, grounded neutral ❑ WYE, ungrounded neutral

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

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

1. One-line Diagram

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

- The one-line diagram should 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.
- The diagram should also depict the metering arrangement required whether installed on the customer side of an existing meter ("net metering/billing") 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 drawing.
- This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.
- Is one-line diagram enclosed? Yes ❑ No ❑

2. Site Plan

- Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility (e.g., Latitude and Longitude Coordinates and USGS topographic map, or other diagram or documentation) and the proposed Point of Interconnection.
- Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) _____
  _____
- Is Site Plan Enclosed? Yes ❑ No ❑
- Is Site Control Verification Form Enclosed? Yes ❑ No ❑

3. 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 ❑

4. Protection and Control Schemes

- 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 ❑

Applicant Signature

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

For Interconnection Customer:

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

Print Name: _____