

# TRI-COUNTY RURAL ELECTRIC COOPERATIVE

## Application for Operation of Interconnected Customer-Owned Generation

**This application should be completed and returned to the Cooperative Contact in order to begin processing the request. See Member Guidelines for Electric Power Generator Installation and Interconnection for additional information.**

*INFORMATION: This application is used by the Cooperative to determine the required equipment configuration for the Member interface. Every effort should be made to supply as much information as possible.*

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### **PART 1**

#### **MEMBER/APPLICANT INFORMATION**

Name: \_\_\_\_\_

Mailing

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Daytime Phone No.: \_\_\_\_\_ Evening Phone No.: \_\_\_\_\_

Account Number: \_\_\_\_\_ Map Number: \_\_\_\_\_

Email Address: \_\_\_\_\_ Fax Number: \_\_\_\_\_

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#### **PROJECT DESIGN/ENGINEERING (ARCHITECT) (if applicable)**

Company: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

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#### **ELECTRICAL CONTRACTOR (if applicable)**

Company: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

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**TYPE OF GENERATOR** (as applicable)

Photovoltaic (Solar) _____	Windmill _____	Microturbine _____
Diesel Engine _____	Gas Engine _____	Turbine _____
Hydro _____	Bio-gas _____	Other _____

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**ESTIMATED LOAD, GENERATOR RATING AND MODE OF OPERATION INFORMATION**

The following information is necessary to help properly design the Cooperative customer interconnection. This information is not intended as a commitment or contract for billing purposes.

**Electricity Use, Production and Purchases**

- (a) Anticipated annual electricity consumption of the facility or site: \_\_\_\_\_ (kWh)
- (b) Anticipated annual electricity production of the generation system: \_\_\_\_\_ (kWh)
- (c) Anticipated annual electricity purchases (i.e., (a) minus (b)): \_\_\_\_\_ (kWh)\*

\* Value will be negative if there are net sales to the Public Utility.

**Mode of Operation**

Isolated \_\_\_\_\_          Paralleling \_\_\_\_\_          Power Export \_\_\_\_\_

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**DESCRIPTION OF PROPOSED INSTALLATION AND OPERATION**

Give a general description of the proposed installation, including a detailed description of its planned location, the date you plan to operate the generator, the frequency with which you plan to operate it and whether you plan to operate it during on or off-peak hours.

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**Estimated In-service Date:** \_\_\_\_\_

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## PART 2

Complete all applicable items. This information is required for your installation to be considered. The equipment manufacturer will be able to provide the information requested in this section.

### SYNCHRONOUS GENERATOR DATA

Unit Number: \_\_\_\_\_ Total number of units with listed specifications on site: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Type: \_\_\_\_\_ Model No. \_\_\_\_\_  
Serial Number (each): \_\_\_\_\_ Date of manufacture: \_\_\_\_\_  
Phases: Single \_\_\_\_\_ Three \_\_\_\_\_  
R.P.M.: \_\_\_\_\_ Frequency (Hz): \_\_\_\_\_  
Rated Output (for one unit): \_\_\_\_\_ Kilowatt \_\_\_\_\_ Kilovolt-Ampere  
Rated Power Factor (%): \_\_\_\_\_ Rated Voltage (Volts): \_\_\_\_\_  
Rated Amperes: \_\_\_\_\_  
Field Volts: \_\_\_\_\_ Field Amps: \_\_\_\_\_ Motoring power (kW): \_\_\_\_\_  
Synchronous Reactance (Xd): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Transient Reactance (X'd): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Subtransient Reactance (X''d): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Negative Sequence Reactance (Xs): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Zero Sequence Reactance (Xo): \_\_\_\_\_ % on \_\_\_\_\_ KVA base  
Neutral Grounding Resistor (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
I<sub>2</sub><sup>2</sup>t or K (heating time constant): \_\_\_\_\_  
Additional information: \_\_\_\_\_  
\_\_\_\_\_

### INDUCTION GENERATOR DATA

Rotor Resistance (Rr): \_\_\_\_\_ ohms Stator Resistance (Rs): \_\_\_\_\_ ohms  
Rotor Reactance (Xr): \_\_\_\_\_ ohms Stator Reactance (Xs): \_\_\_\_\_ ohms  
Magnetizing Reactance (Xm): \_\_\_\_\_ ohms Short Circuit Reactance (Xd''): \_\_\_\_\_ ohms  
Design letter: \_\_\_\_\_ Frame Size: \_\_\_\_\_  
Exciting Current: \_\_\_\_\_ Temp Rise (deg °C): \_\_\_\_\_  
Reactive Power Required: \_\_\_\_\_ Vars (no load), \_\_\_\_\_ Vars (full load)  
Additional information: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### GENERATOR STEP-UP TRANSFORMER (if applicable)

Generator unit number: \_\_\_\_\_ Date of manufacturer: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Serial Number: \_\_\_\_\_  
High Voltage: \_\_\_\_\_ KV, Connection: delta wye, Neutral solidly grounded? \_\_\_\_\_  
Low Voltage: \_\_\_\_\_ KV, Connection: delta wye, Neutral solidly grounded? \_\_\_\_\_  
Transformer Impedance (Z): \_\_\_\_\_ % on \_\_\_\_\_ KVA base.  
Transformer Resistance (R): \_\_\_\_\_ % on \_\_\_\_\_ KVA base.  
Transformer Reactance (X): \_\_\_\_\_ % on \_\_\_\_\_ KVA base.  
Neutral Grounding Resistor (if applicable): \_\_\_\_\_  
\_\_\_\_\_

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**INVERTER DATA** (if applicable)

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_  
Rated Power Factor (%): \_\_\_\_\_ Rated Voltage (Volts): \_\_\_\_\_ Rated Amperes: \_\_\_\_\_  
Inverter Type (ferroresonant, step, pulse-width modulation, etc): \_\_\_\_\_  
Inverter Rating (kw): \_\_\_\_\_ Phases: \_\_\_\_\_  
  
Type commutation: forced \_\_\_\_\_ line \_\_\_\_\_  
Harmonic Distortion: Maximum Single Harmonic (%) \_\_\_\_\_  
Maximum Total Harmonic (%) \_\_\_\_\_

Note: Attach all available calculations, test reports, and oscillographic prints showing inverter output voltage and current waveforms.

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**POWER CIRCUIT BREAKER** (if applicable)

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_  
Rated Voltage (*kilovolts*): \_\_\_\_\_ Rated ampacity (*Amperes*) \_\_\_\_\_  
*Interrupting rating (Amperes)*: \_\_\_\_\_ *BIL Rating*: \_\_\_\_\_  
Interrupting medium / insulating medium (ex. Vacuum, gas, oil ) \_\_\_\_\_ / \_\_\_\_\_  
Control Voltage (Closing): \_\_\_\_\_ (Volts) AC DC  
Control Voltage (Tripping): \_\_\_\_\_ (Volts) AC DC Battery Charged Capacitor  
Close energy: Spring Motor Hydraulic Pneumatic Other: \_\_\_\_\_  
Trip energy: Spring Motor Hydraulic Pneumatic Other: \_\_\_\_\_  
Bushing Current Transformers: \_\_\_\_\_ (Max. ratio) Relay Accuracy Class: \_\_\_\_\_  
Multi ratio? No Yes: (Available taps) \_\_\_\_\_

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**SHORT CIRCUIT CURRENT CONTRIBUTION AND UNIT INRUSH CURRENT OF THE PROPOSED GENERATING FACILITY**

Distributed Generator Short Circuit Current

Single Phase to Ground \_\_\_\_\_ Amperes  
Three-Phase Symmetrical \_\_\_\_\_ Amperes  
Three-Phase Asymmetrical \_\_\_\_\_ Amperes

Does the Facility Start with the Aid of Grid Power? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, what is the inrush Current? \_\_\_\_\_ amps (inrush current)

Will this Generation be used to primarily offset the members' electrical energy consumption?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, generators up to 50 KW for residential consumer class and up to 200 KW for all other consumer classes qualify for the cooperatives net metering AES service rate.

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**ADDITIONAL INFORMATION**

In addition to the items listed above, please attach the following:

- detailed one-line diagram of the proposed facility
- all applicable elementary diagrams
- control schematics
- site plan
- major equipment (generators, transformers, inverters, circuit breakers, protective relays, etc.)
- specifications
- test reports
- any other applicable drawings or documents necessary for the proper design of the interconnection

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**SIGN OFF AREA**

The member agrees to provide the Cooperative with any additional information required to complete the interconnection. The member agrees to operate his equipment within the guidelines set forth by the cooperatives policy on alternate energy production.

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Applicant Signature

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Date

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Application Received By

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Date

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**ELECTRIC COOPERATIVE CONTACT FOR APPLICATION SUBMISSION AND FOR MORE INFORMATION:**

Cooperative contact: **Austin Helmuth**  
Title: **Staff Engineer**  
Address: **Tri-County Rural Electric Cooperative**  
**22 North Main Street**  
**Mansfield, PA 16933**  
Phone: **(570) 662-8008**  
Fax: **(570) 662-3573**  
e-mail: **[austinh@ctenterprises.org](mailto:austinh@ctenterprises.org)**