# HILL COUNTY ELECTRIC COOPERATIVE

## Application for Operation of Customer-Owned Generation

**This application should be completed as soon as possible and returned to Hill County Electric Cooperative (HCE) in order to begin processing the request. See HCE Policy Manual Section 10: Interconnection of Small Customer Generation Facilities for additional information.**

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

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## PART 1

**OWNER/APPLICANT INFORMATION**

Company:_____

Mailing Address:_____

City:_____County:_____State:_____Zip Code:_____

Phone Number:_____Representative:_____

**PROJECT DESIGN/ENGINEERING (ARCHITECT)** (as applicable)

Company:_____

Mailing Address:_____

City:_____County:_____State:_____Zip Code:_____

Phone Number:_____Representative:_____

**ELECTRICAL CONTRACTOR** (as applicable)

Company:_____

Mailing Address:_____

City:_____County:_____State:_____Zip Code:_____

Phone Number:_____Representative:_____

**TYPE OF GENERATOR** (as applicable)

| | | | | | |
|---|---|---|---|---|---|
| Photovoltaic | _____ | Wind | _____ | Microturbine | _____ |
| Diesel Engine | _____ | Gas Engine | _____ | Turbine | _____ |
| Other | _____ | | | | |

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

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

Total Site Load _____ (kW)

Residential _____ Commercial _____ Industrial _____

Generator Rating _____ (kW) Annual Estimated Generation _____ (kWh)

**Mode of Operation**

Isolated _____ Paralleling _____ Power Export _____

## DESCRIPTION OF PROPOSED INSTALLATION AND OPERATION

Give a general description of the proposed installation, including a detailed description of its planned location and when you plan to operate the generator.

_____

_____

_____

_____

_____

_____

_____

_____

_____

# PART 2

(Complete all applicable items. Copy this page as required for additional generators)

**SYNCHRONOUS GENERATOR DATA**

Unit Number: _____Total number of units with listed specifications on site: _____
Manufacturer: _____
Type: _____Date of manufacture: _____
Serial Number (each):_____
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):_____
_____
$I_2^2t$ 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:_____
_____

**PRIME MOVER** (Complete all applicable items)

Unit Number: _____ Type: _____
Manufacturer: _____
Serial Number:_____ Date of manufacturer: _____
H.P. Rated: _____ H.P. Max.: _____Inertia Constant: _____ lb.-ft.$^2$
Energy Source (hydro, steam, wind, etc.) _____
_____
_____

**GENERATOR TRANSFORMER** (Complete all applicable items)

TRANSFORMER (between generator and utility system)
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 g rounded? _____
Transformer Impedance(Z): _____% on _____ KVA base.
Transformer Resistance (R): _____% on _____ KVA base.
Transformer Reactance (X): _____% on _____ KVA base.
Neutral Grounding Resistor (if applicable): _____
_____

**INVERTER DATA** (if applicable)

Manufacturer: _____ Model: _____
Rated Power Factor (%): _____Rated Voltage (Volts): _____ Rated Amperes: _____
Inverter Type (ferroresonant, step, pulse-width modulation, etc): _____

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.

**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) _____

**ADDITIONAL INFORMATION**

*In addition to the items listed above, please attach a detailed one-line diagram of the proposed facility, all applicable elementary diagrams, major equipment, (generators, transformers, inverters, circuit breakers, protective relays, etc.) specifications, test reports, etc., and any other applicable drawings or documents necessary for the proper design of the interconnection. Also describe the project's planned operating mode (e.g., combined heat and power, peak shaving, etc.), and its address or grid coordinates.*

END OF PART 2

**SIGN OFF AREA**

The customer agrees to provide the Cooperative with any additional information required to complete the interconnection. The customer shall operate his equipment within the guidelines set forth by the cooperative.

_____ _____
Applicant Date

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

| | | |
|---|---|---|
| Cooperative contact: | Warren Schmitt | Shane Kemmer |
| Title: | Engineering & Operations Manager | Operations Coordinator |
| Address: | Hill County Electric Cooperative, Inc. | |
| | PO Box 2330 | |
| | Havre, MT 59501 | |
| Phone: | (406) 394-7804 | |
| Fax: | (406) 394-7815 | |
| e-mail: | wschmitt@itstriangle.net | skemmer@itstriangle.net |