

## PSNH INTERCONNECTION REQUEST

Send the completed Interconnection Request and required attachments to:

Public Service of New Hampshire  
Attn: Michael Motta, Senior Engineer – Supplemental Energy Sources  
P. O. Box 330  
Manchester, NH 03105

Telephone Number: 603-634-2920  
Fax: 603-634-2449  
E-Mail Address: Michael.Motta@nu.com

An Interconnection Request is considered complete when it provides all applicable and correct information required below.

**Documentation that the applicant has control of the property on which the proposed facility shall be located must be submitted with the Interconnection Request. The documentation may include proof of ownership, a leasehold interest, a right to develop, or an option to acquire the site.**

**A site electrical one-line diagram showing the configuration of the Generating Facility equipment, current and potential circuits, and protection control schemes. The one-line diagram must be signed and stamped by a licensed Professional Engineer.**

### **Interconnection Customer Information:**

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

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

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

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

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

Facility Location (if different from above): \_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**Interconnection Customer Information:**

Alternative Contact Information (if different from the Interconnection Customer)

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

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

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

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

Facility Location (if different from above): \_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**Is the Interconnection Request for:**

New Generating Facility?

Yes ☐ No ☐

Capacity addition to or Material Modification of an existing Generating Facility:

Yes ☐ No ☐

If capacity addition or Material Modification of an existing facility, please describe:

\_\_\_\_\_  
\_\_\_\_\_

Commencement of participation in the wholesale markets by an existing Generating Facility:

Yes ☐ No ☐

A retail customer interconnecting a New Generating Facility that will produce electric energy to be consumed only on the retail customer's site?

Yes ☐ No ☐

If onsite use of power, describe the mode of operation: (Please Check all that Apply)

- ☐ Peak Shaving
- ☐ Demand Management
- ☐ Primary Power/Base Load
- ☐ Combined Heat and Power or Cogeneration

- ☐ Stand By/Emergency/Back-up
- ☐ Net Metering

If Net Metering, does the Generating Facility meet the requirements for eligibility as defined in Puc 902.01 for a “Combined Heat and Power System” and/or Puc 902.02 for a “Customer-Generator” of Chapter Puc 900 Net Metering for Customer Owned Renewable Energy Generation Resources of 1000 Kilowatts or Less.

Puc 902.01 “Combined heat and power system” means a “combined heat and power system” as defined on RSA 321-A:1-a, II-d, namely “a new system installed after July 1, 2011, that produces heat and electricity from one fuel input using an eligible fuel, without restriction to generating technology, has an electric generating capacity rating of at least one kilowatt and not more than 30 kilowatts and a fuel system efficiency of not less than 80 percent in the production of heat and electricity, or has an electric generating capacity greater than 30 kilowatts and not more than one megawatt and a fuel system efficiency of not less than 65 percent in the production of heat and electricity. Fuel system efficiency shall be measured as a usable thermal and electrical output in BTU’s divided by fuel input in BTU’s.”

Puc 902.02 “Customer-generator” means “eligible customer-generator” as defined in RSA 362-A:1-a, II-b, namely “an electric utility customer who owns or operates an electrical generating facility either powered by renewable energy or which employs a heat led combined heat and power system, with a total peak generating capacity of not more than 100 kilowatts, or that first began operation after July 1, 2010 and has a total peak generating capacity of 100 kilowatts or more up to one megawatt, that is located behind a retail meter on the customer’s premises, is interconnected and operates in parallel with the electric grid, and is used in the first instance to offset the customer’s own electricity requirements”.

Yes ☐ No ☐

Interconnection Customer Signature \_\_\_\_\_ Date \_\_\_\_\_

A Qualifying Facility where 100% of the output will be sold to PSNH?

Yes ☐ No ☐

A Qualifying Facility intending to sell power at wholesale to an entity other than PSNH?

Yes ☐ No ☐

A Generator interconnecting a new Generating Facility that plans to participate in the wholesale markets?

Yes ☐ No ☐

An existing Generating Facility commencing participation in the wholesale markets?

Yes ☐ No ☐

**Paralleling:**

Will the Generating Facility operate in parallel with the PSNH system for any amount of time?

Yes ☐ No ☐

If No: Then Generator is operating as "Open" Transition.

If Yes: Will the Generating Facility operate in parallel with PSNH for longer than 100 milliseconds?

Yes ☐ No ☐

If No: Then Generator is operating as "Closed" Transition.

If Yes: Then Generator is operating as "Parallel Operation."

Will the generator operation vary by season? (Please describe)

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

Account # \_\_\_\_\_

Energy Service Provider (if other than PSNH) \_\_\_\_\_

Meter # \_\_\_\_\_

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

Title: \_\_\_\_\_

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

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Requested Point of Interconnection: \_\_\_\_\_

Generating Facility's Requested In-Service Date: \_\_\_\_\_

**Generating Facility Information:**

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

Energy Source:

Solar ☐ Wind ☐ Hydro ☐ Hydro Type (e.g. Run-of-River): ☐  
Diesel ☐ Natural Gas ☐ Fuel Oil ☐

Other (state type) \_\_\_\_\_

Prime Mover:

Fuel Cell ☐ Reciprocating Engine ☐ Gas Turbine ☐  
Steam Turbine ☐ Micro-turbine ☐ PV ☐

Other (state type) \_\_\_\_\_

Type of Generator: Synchronous ☐ Induction ☐ Inverter ☐

Generator Manufacturer: \_\_\_\_\_

Generator Model Name & Number: \_\_\_\_\_

Generator Version Number: \_\_\_\_\_

Generator Nameplate Rating: \_\_\_\_\_ kW (Typical) For Inverter-based machines the kW rating of the inverter, and for all other interconnections the kW rating of the generation unit.

Generator Nameplate kVAR: \_\_\_\_\_

Generating Facility or Customer-Site Load: \_\_\_\_\_ kW (if none, so state)

Typical Reactive Load (if known): \_\_\_\_\_

Maximum Physical Export Capability Requested: \_\_\_\_\_ kW

Generator Nameplate Output Power Rating in kW:

(Summer) \_\_\_\_\_ (Winter) \_\_\_\_\_

Generator Nameplate Output Power Rating in kVA:

(Summer) \_\_\_\_\_ (Winter) \_\_\_\_\_

Individual Generator Power Factor:

Rated Power Factor: Leading \_\_\_\_\_ Lagging \_\_\_\_\_

**Generating Facility Characteristic Data (for inverter-based machines):**

Inverter Manufacturer: \_\_\_\_\_

Model Name & Number: \_\_\_\_\_

Is the Inverter UL 1741 listed? Yes ☐ No ☐  
☐ ☐

Is the Inverter IEEE 1547 listed? Yes ☐ No ☐  
Is the Inverter IEEE 1547.1 listed? Yes ☐ No ☐

Max design fault contribution current: \_\_\_\_\_ Instantaneous \_\_\_\_\_ or RMS? \_\_\_\_\_

Harmonics Characteristics: \_\_\_\_\_

Start-up requirements: \_\_\_\_\_

Available fault current: \_\_\_\_\_

### **Wind Farm Interconnection:**

Total Number of Generators in wind farm to be interconnected pursuant to this Interconnection

Request:

Quantity: \_\_\_\_\_ Elevation: \_\_\_\_\_ Single Phase ☐ Three Phase ☐

### **Generating Facility Characteristic Data (for rotating machines):**

Speed: \_\_\_\_\_ RPM

Neutral Grounding Resistor (If Applicable): \_\_\_\_\_

### **Synchronous Generators:**

Direct Axis Synchronous Reactance,  $X_d$ : \_\_\_\_\_ Per Unit

Direct Axis Transient Reactance,  $X_d'$ : \_\_\_\_\_ Per Unit

Direct Axis Sub transient Reactance,  $X_d''$ : \_\_\_\_\_ Per Unit

Negative Sequence Reactance,  $X_2$ : \_\_\_\_\_ Per Unit

Zero Sequence Reactance,  $X_0$ : \_\_\_\_\_ Per Unit

KVA Base: \_\_\_\_\_

Field Volts: \_\_\_\_\_

Field Amperes: \_\_\_\_\_

### **Induction Generators:**

Motoring Power (kW): \_\_\_\_\_

$I_2^2 t$  or K (Heating Time Constant): \_\_\_\_\_

Rotor Resistance,  $R_r$ : \_\_\_\_\_ Per Unit

Stator Resistance,  $R_s$ : \_\_\_\_\_ Per Unit

Stator Reactance,  $X_s$ : \_\_\_\_\_ Per Unit

Rotor Reactance,  $X_r$ : \_\_\_\_\_ Per Unit  
Magnetizing Reactance,  $X_m$ : \_\_\_\_\_ Per Unit  
Short Circuit Reactance,  $X_d''$ : \_\_\_\_\_ Per Unit  
Exciting Current: \_\_\_\_\_ Amps  
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

**Transformer Data (If Applicable, for Generating Facility-Owned Transformer):**

Transformer Size: \_\_\_\_\_ kVA  
Is the transformer: \_\_\_\_\_ single phase \_\_\_\_\_ three phase?  
Transformer Impedance: \_\_\_\_\_ % on \_\_\_\_\_ kVA Base  
Transformer Positive-Sequence Short Circuit Impedances (pu):  
 $Z_{ps}$ = \_\_\_\_\_,  $Z_{pt}$ = \_\_\_\_\_,  $Z_{st}$ = \_\_\_\_\_  
Transformer Zero-Sequence Impedances (pu):  
 $Z_{pm0}$ = \_\_\_\_\_,  $Z_{sm0}$ = \_\_\_\_\_,  $Z_{mg0}$ = \_\_\_\_\_  
Transformer Neutral Grounding Reactor/Resistor Impedance (Ohms):  
Transformer BIL Rating \_\_\_\_\_ kV  
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 Generating Facility-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): \_\_\_\_\_

**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:**

Is evidence of site control enclosed?

Yes ☐ No ☐

Are site electrical One-Line Diagram(s) showing the configuration of all Generating Facility equipment enclosed?

Yes ☐ No ☐

Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility (*e.g.*, USGS topographic map or other diagram or documentation).

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes.



Applicant Signature

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

Interconnection Customer: \_\_\_\_\_ Date: \_\_\_\_\_