IDAHO PURPA GENERATOR INTERCONNECTION REQUEST
(Application Form)

Transmission Provider: IDAHO POWER COMPANY

Designated Contact Person:	Jeremiah Creason
Address:	1221 W. Idaho Street, Boise ID 83702
Telephone Number:	208-388-2658
Fax:	208-388-5504
E-Mail Address:	jcreason@idahopower.com

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

Preamble and Instructions

An Interconnection Customers who request interconnection must submit this Interconnection Request by hand delivery, mail, e-mail, or fax to the Transmission Provider.

Processing Fee or Deposit:

If the Interconnection Request passes ALL screens of SGIP Section 2.2.1, the application may be submitted under the Fast Track Process, and the non-refundable processing fee is $500. Please contact Idaho Power if you have any questions.

All Interconnection Requests that do not pass the Fast Track screens, shall submit a deposit of $1,000 for projects up to 30 MW in size and $10,000 for projects greater than 30 MW in size towards the cost of the feasibility study.

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: _____

Alternative Contact Information (if different from the Interconnection Customer)

Contact Name: _____

Title: _____

Address: _____

_____

Telephone (Day): _____ Telephone (Evening): _____

Fax: _____ E-Mail Address: _____

Application is for: _____New Small Generating Facility
_____Capacity addition to Existing Small Generating Facility

If capacity addition to existing facility, please describe: _____
_____

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

To Supply Power to the Interconnection Customer? Yes ___No ___
To Supply Power to Others? Yes ____ No ____

For installations at locations with existing electric service to which the proposed Small 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 Transmission Provider]

Requested Point of Interconnection: _____

Interconnection Customer's Requested In-Service Date: _____

Small Generating Facility Information
Data apply only to the Small 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 ___Recip Engine ___Gas Turb ___Steam Turb
___Microturbine ___PV ___Other

Type of Generator: ____Synchronous ____Induction ____ Inverter

Generator Nameplate Rating: _____kW (Typical) Generator Nameplate kVAR: _____

Interconnection Customer or Customer-Site Load: _____kW (if none, so state)

Typical Reactive Load (if known): _____

Maximum Physical Export Capability Requested: _____ kW

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

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

Is the prime mover compatible with the certified protective relay package? ____Yes ____No

Generator (or solar collector)
Manufacturer, Model Name & Number: _____
Version Number: _____

Nameplate Output Power Rating in kW: (Summer) _____ (Winter) _____
Nameplate Output Power Rating in kVA: (Summer) _____ (Winter) _____

Individual Generator Power Factor
Rated Power Factor: Leading: _____Lagging: _____

Total Number of Generators in wind farm to be interconnected pursuant to this
Interconnection Request: _____ Elevation: _____ ___Single phase ___Three phase

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

List of adjustable set points for the protective equipment or software: _____

Small Generating Facility Characteristic Data (for rotating machines)

RPM Frequency: _____
(*) Neutral Grounding Resistor (If Applicable): _____

Synchronous Generators:

Direct Axis Synchronous Reactance, Xd: _____ 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, Rr: _____
Stator Resistance, Rs: _____
Stator Reactance, Xs: _____
Rotor Reactance, Xr: _____
Magnetizing Reactance, Xm: _____
Short Circuit Reactance, Xd": _____
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 Transmission Provider prior to submitting the Interconnection Request to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only

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 determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

Interconnection Facilities Information
Will a transformer be used between the generator and the point of common coupling? ___Yes ___No

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: _____ 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 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: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
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):

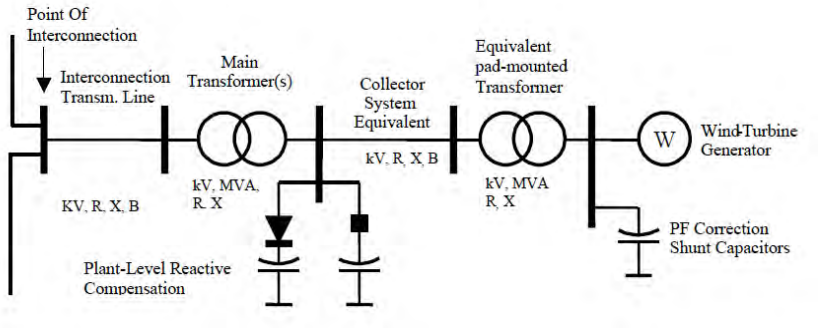
Manufacturer: _____
Type: _____ Accuracy Class: ___ Proposed Ratio Connection: ____

Manufacturer: _____
Type: _____ Accuracy Class: ___ Proposed Ratio Connection: ____

Wind Turbine Generating Facility Required Data

1. Single Machine Equivalent One-Line Diagram

Please provide a single machine equivalent one-line diagram similar to figure below:



2. Interconnection Transmission Line

- Point of Interconnection (substation or transmission line name): _____
- Line voltage = _____ kV
- MVA Normal Rating = _____ MVA
- MVA Emergency Rating = _____ MVA
- R = _____ ohm or _____ pu on 100 MVA and line kV base (positive sequence)
- X = _____ ohm or _____ pu on 100 MVA and line kV base (positive sequence)
- B = _____ μF or _____ pu on 100 MVA and line kV base (positive sequence)

3. Station Transformer

(Note: If there are multiple transformers, data for each transformer should be provided)

- Nameplate Normal Rating (ONAN/ONAF/ONAF): _____/_____/_____ MVA
- Emergency Rating (ONAN/ONAF/ONAF): _____/_____/_____ MVA
- Nominal Voltage for each winding (Low /High /Tertiary): _____/_____/_____ kV
- Available taps: _____ (indicate fixed or with LTC), Operating Tap: _____
- Positive sequence ZHL: _____%, ____X/R on transformer self-cooled (ONAN) MVA
- Winding connection vector group (delta-wye-gnd, delta-delta, etc.): _____

4. Collector System Equivalent Model

- Collector system voltage = _____ kV
- MVA Normal Rating = _____ MVA
- MVA Emergency Rating = _____ MVA
- R = _____ ohm or _____ pu on 100 MVA and collector kV base (positive sequence)
- X = _____ ohm or _____ pu on 100 MVA and collector kV base (positive sequence)
- B = _____ μF or _____ pu on 100 MVA and collector kV base (positive sequence)
- Attach a one-line diagram of the collector layout indicating conductor length, type, and size.

5. Wind-turbine Generator (WTG) Pad-Mounted Transformer

- Number of generator step-up transformers: _____
- Individual Nameplate rating: _____ MVA
- Individual Emergency rating: _____ MVA
- Nominal voltage for each winding (Low /High): _____/_____kV
- Available taps: _____ (indicate fixed or with LTC), Operating Tap:_____

- Positive sequence impedance (Z1) _____%, ____X/R on transformer self-cooled MVA
- Winding connection vector group (delta-wye-gnd, delta-delta, etc.): _____

6. Wind-turbine Generator (WTG) Powerflow Data

Proposed projects may include one or more WTG Types (See Note 6.1 below). Please provide the following data for each turbine type included in the proposed project:

- Number of WTGs: _____
- Nameplate Rating (each WTG): _____ MVA
- Nameplate Rating (each WTG): _____ MW
- WTG Manufacturer and Model: _____
- WTG Type (See Note 6.1): _____

For Type 1 or Type 2 WTGs:

- Uncompensated power factor at full load: _____
- Power factor correction capacitors at full load: _____Mvar
- Number of shunt stages and size _____
- Please attach capability curve describing reactive power or power factor range from 0 to full output, including the effect of shunt compensation.

For Type 3 and Type 4 WTGs:

- Maximum under-excited power factor at full load: _____
- Maximum under-excited power factor at full load: _____
- Control mode: _____ (voltage control, fixed power factor) (See Note 6.2)
- Please attach capability curve describing reactive power or power factor range from 0 to full output.

NOTE 6.1 - WTG Type can be one of the following:

- Type 1 – Squirrel-cage induction generator
- Type 2 – Wound rotor induction machine with variable rotor resistance
- Type 3 – Doubly-fed asynchronous generator
- Type 4 – Full converter interface

NOTE 6.2 - Type 1 and Type 2 WTGs typically operate on fixed power factor mode for a wide range of output level, aided by turbine-side power factor correction capacitors (shunt compensation).

With a suitable plant-level controller, Type 3 and Type 4 WTGs may be capable of dynamically varying power factor to contribute to voltage control mode operation, if required by the generator interconnection agreement. Please consult with the WTG manufacturer when in doubt. The interconnection study will determine the voltage control requirements for the project. Plant-level reactive compensation requirements are engineered to meet specific interconnection requirements. WTG reactive capability data described above could significantly impact study results and plant-level reactive compensation requirements.

7. Plant Reactive Power Compensation

Provide the following information for plant-level reactive compensation, if applicable:

- Individual shunt capacitor and size of each: _____ MVA

- Dynamic reactive control device, (SVC, STATCOM): _____
- Control range _____ MVAr (lead and lag)
- Control mode (e.g., voltage, power factor, reactive power): _____
- Regulation point or bus _____
- Description of control strategy
- Operating characteristic
- Automatic control model pickup levels and time delay setpoints
- Indicate if the project includes a plant controller _____

8. Wind-turbine Generator (WTG) Dynamics Data

- Provide dynamic models for transient stability analysis in PSLF format using models approved for use by WECC listed in the WECC Approved Dynamic Model Library.

- Provide low/high voltage-ride-through dynamic models using an approved PSLF format or the equipment low/high voltage protection settings.

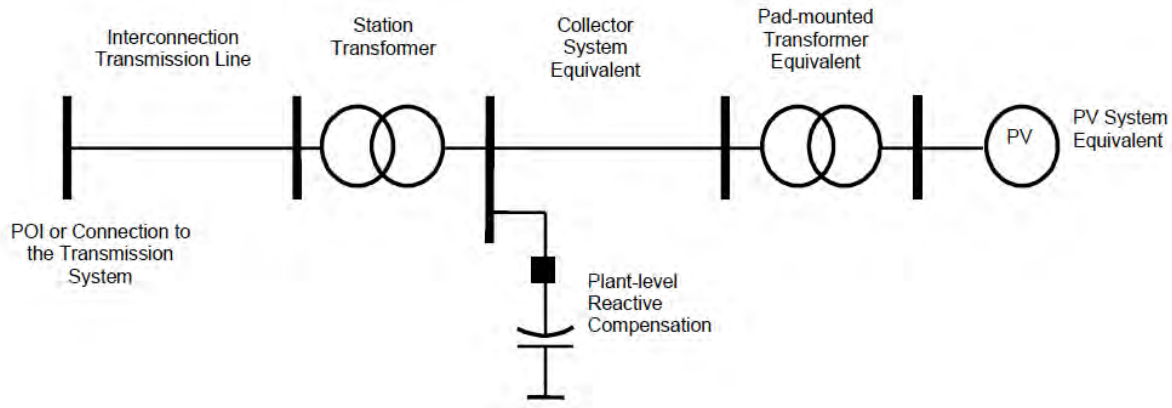
- Provide over/under frequency-ride-through dynamic models using an approved PSLF format or the equipment over/under frequency protection settings.

Note 8.1 - Please reference the WECC Wind Plant Dynamic Modeling Guidelines for additional information regarding the dynamics modeling needs of Idaho Power and WECC.

Photo Voltaic (PV) Generating Facility Required Data

1. Single Machine Equivalent One-Line Diagram

Please provide a single machine equivalent one-line diagram similar to figure below:



2. Interconnection Transmission Line

- Point of Interconnection (substation or transmission line name): _____
- Line voltage = _____ kV
- MVA Normal Rating = _____ MVA
- MVA Emergency Rating = _____ MVA
- R = _____ ohm or _____ pu on 100 MVA and line kV base (positive sequence)

- X = _____ ohm or _____ pu on 100 MVA and line kV base (positive sequence)
- B = _____ μF or _____ pu on 100 MVA and line kV base (positive sequence)

3. Station Transformer

(Note: If there are multiple transformers, data for each transformer should be provided)

- Nameplate Normal Rating (ONAN/ONAF/ONAF): _____/_____/_____ MVA
- Emergency Rating (ONAN/ONAF/ONAF): _____/_____/_____ MVA
- Nominal Voltage for each winding (Low /High /Tertiary): _____/_____/_____ kV
- Available taps: _____ (indicate fixed or with LTC), Operating Tap: _____
- Positive sequence ZHL: _____%, ____X/R on transformer self-cooled (ONAN) MVA
- Winding connection vector group (delta-wye-gnd, delta-delta, etc.): _____

4. Collector System Equivalent Model

- Collector system voltage = _____ kV
- MVA Normal Rating = _____ MVA
- MVA Emergency Rating = _____ MVA
- R = _____ ohm or _____ pu on 100 MVA and collector kV base (positive sequence)
- X = _____ ohm or _____ pu on 100 MVA and collector kV base (positive sequence)
- B = _____ μF or _____ pu on 100 MVA and collector kV base (positive sequence)
- Attach a one-line diagram of the collector layout indicating conductor length, type, and size.

5. Inverter Step-Up Transformer

- Number of inverter step-up transformers: _____
- Individual Nameplate rating: _____ MVA
- Individual Emergency rating: _____ MVA
- Nominal voltage for each winding (Low /High): _____/_____kV
- Available taps: _____ (indicate fixed or with LTC), Operating Tap:_____
- Positive sequence impedance (Z1) _____%, ____X/R on transformer self-cooled MVA
- Winding connection vector group (delta-wye-gnd, delta-delta, etc.): _____

6. Inverter and PV Module Data

- Number of Inverters: _____
- Nameplate Rating (each Inverter): _____/_____ kW/kVA
- Describe Inverter reactive capability control mode (i.e. voltage control, power factor, voltage droop control, etc): _____
- Describe Inverter reactive capability control range maximum and minimum values: _____
- Provide Reactive Capability Curve (Plot of Reactive Capability vs. Real Power)
- PV Inverter Short Circuit Current: _____
- Inverter Manufacturer and Model #: _____
- PV Module Manufacturer and Model #: _____

7. Plant Reactive Power Compensation

Provide the following information for plant-level reactive compensation, if applicable:

- Individual shunt capacitor and size of each: _____ MVA
- Dynamic reactive control device, (SVC, STATCOM): _____
- Control range _____ MVAr (lead and lag)
- Control mode (e.g., voltage, power factor, reactive power): _____
- Regulation point or bus _____
- Description of control strategy
- Operating characteristic
- Automatic control model pickup levels and time delay setpoints
- Indicate if the project includes a plant controller _____

8. Photo-Voltaic Generator Dynamics Data

- Provide dynamic models for transient stability analysis in PSLF format using models approved for use by WECC listed in the "WECC Approved Dynamic Model Library" found at www.wecc.biz.

- Provide low/high voltage-ride-thourgh dynamic models using an approved PSLF format or the equipment low/high voltage protection settings.

- Provide over/under frequency-ride-thourgh dynamic models using an approved PSLF format or the equipment over/under frequency protection settings.

- Please reference the "WECC Solar Plant Dynamic Modeling Guidelines" found at www.wecc.biz for additional information regarding the dynamics modeling needs of Idaho Power and WECC.

Small Generating Facility Characteristic Data (for inverter-based machines)

Max design fault contribution current: _____ Instantaneous ___ or RMS? ____

Harmonics Characteristics: _____

Start-up requirements: _____

General Information

Enclose copy of site electrical one-line diagram showing the configuration of all Small Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Small Generating Facility is larger than 50 kW. Is One-Line Diagram Enclosed? ____Yes ____No

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

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) _____

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 is true and correct.

For Interconnection Customer:

Signed

_____Date: _____

Printed

_____