Distribution Generator Interconnections

Project Application – Load Displacement (LD)

This application form shall be used for a distribution generator project that will interconnect and operate in parallel with BC Hydro Distribution system and co-generate to displace or shift the peak load a.k.a., Load Displacement (LD) without any power injection to BCH distribution system (both integrated and non-integrated area) at Point of Metering (POM). For LD generation up to 100kW which qualifies and intends to participate in Net Metering (NM) program must not use this form. You can visit our **webpage** for an overview of the interconnection process and more details about interconnection requirements. If you have any questions, please contact your BC Hydro Interconnections Manager or email **Distribution.Generators@bchydro.com**. An EGBC practicing Professional Engineer (P.Eng.) must seal, sign and date this completed form. If this form is transmitted electronically, this document must be authenticated digitally (digital sealing and signing image) as per **Quality Management Guideline of EGBC**.

You may need to submit this application more than once as we make sure this application information is deemed complete. We prefer that you submit this application by email as one single pdf with all the required attachments. If you submit your application as multiple pdfs, please make sure each pdf is clearly titled. This will ensure there is no delay when we assess your application for completeness.

Any Intended Power Injection to BC Hydro System at the POM (If 'No', please continue filling out this form)			
Application Submission Date		Proposed In-Service Date	

1. Interconnection Customer (IC) Information			
Project name		Company name	
Mailing address			
Project contacts			
Role	Name	Phone	Email
Owner/Developer			
Consultant			
Design engineer			

2. Project Information			
Facility General Information			
Project address			
Does this facility currently have electric service from BC Hydro? (If "Yes": provide information below)		☐ Yes	☐ No
BC Hydro meter #		BC Hydro account #	
Project Construction Power			
Will this project need construction power connection from BC Hydro? (If "Yes": answer below)		☐ Yes	☐ No
Project Latitude (deg:min:sec)		Project Longitude (deg:min:sec)	
The date construction begins		Generator testing date	

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3. Generator Information		
Basic Generation Information		
Generation Type (Note: ESS stands for Energy Storage System, e.g., battery)	-Select one or type in-	3.1
Energy source? (Choose Public Utility if the facility uses ESS (e.g., battery) only)	-Select one or type in-	3.2
Total number of generating units at your site? (Existing and new – Excluding ESS, if any)		3.3
Total generation (MW) of all generators at the facility (Existing and new – Including ESS generating/injecting in parallel with other generating units)		3.4
What is the maximum short circuit current (kA) output at POM?		3.5
Is the generating facility capable of "Off Grid" generation?	-Select One-	3.6

3. 1 Specific generator type section instructions

This application has a different section for inverter, synchronous and induction type generators. You only need to fill out the appropriate section for your generator type.
If your proposed project has more than one generator types, you will need to fill out multiple generator sections of the appropriate generator type, one for each generator. If you have more than one unit of generation, please include the information under each unit separately. For solar or Battery system, same types of inverters can be grouped under a single unit.

Induction generator				
Induction generator information				
Unit Designation (use default unit designation or type in new name)	Unit 1	Unit 2	Unit 3	
Rated apparent power (kVA)				Ind 1
Rated real power (kW)				Ind 2
Rated voltage (kV)				Ind 3
Rated Frequency (Hz)				Ind 4
Power Factor Correction Capacitor Size (kVAR) (if applicable)				Ind 5
Any external self excitation system ?				Ind 6

Inverter Generator				
Inverter Information				
Group Designation (use default unit designation or type in new name)	Unit 1	Unit 2	Unit 3	
Rated apparent power (kVA) – each unit of inverter				Inv 1
Rated real power (kW) – each unit of inverter				Inv 2
Rated voltage (kV)				Inv 3
Number of phases (1–phase or 3–phase)				Inv 4

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Rated Frequency (Hz)				Inv 5
Is your Inverter Certified to CSA C22.2 No 107.1?				Inv 6
Total Number of Inverters units				Inv 7
Total inverter capacity (kW)= Total number of inverter units X Rated Real Power				Inv 8
Energy Storage System				
Energy Storage System (ESS) Information				
Does energy storage use AC/DC bi-directional (charge/discharge) Power Conversion Unit (PCU)?			☐ Yes	☐ No
Group designation (use default unit designation or type in new name)	Unit 1	Unit 2	Unit 3	
Type of energy storage system? (if other, please type in)	-Select one or type in-			Ess 1
Rated AC voltage (kV)				Ess 2
Rated Current (Amp)				Ess 3
Rated frequency (Hz)				Ess 4
Power at peak charge (kW)				Ess 5
Power at peak discharge (kW)				Ess 6
Total stored energy (kWh)				Ess 7
Fault Contribution (Amps)				Ess 8
Synchronous Generator				
Synchronous generator information				
Unit Designation (use default unit designation or type in new name)	Unit 1	Unit 2	Unit 3	
Rated apparent power (kVA)				S 1
Rated real power (kW)				S 2
Rated voltage (kV)				S 3
Number of Phases				S 4
Rated Power Factor (%) Specify if “lagging” (over-excited) or, “leading” (under-excited)				S 5
Rated Frequency (Hz)				S 6

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4. Main circuit breaker with protection relay function information		
Circuit Breaker Unit Designation (Name)		4.1
Rated continuous current (A)		4.2
Rated maximum voltage (kV)		4.3
Rated Frequency (Hz)		4.4
Rated symmetrical short circuit interrupting capability (kA RMS symmetrical)		4.5
Interrupting time (cycles)		4.6
Auto–Reclose capability	☐ Yes ☐ No	4.7
Protection relay manufacturer and model information		4.8
Ground Overcurrent setting tcc curve(s) (e.g., i^2t, instantaneous, inverse time, etc.)		4.9
Phase Overcurrent setting tcc curve(s) (e.g., i^2t, instantaneous, inverse time, etc.)		4.10
Over frequency setting range (Hz)		4.11
Under frequency setting range (Hz)		4.12
Over voltage setting range (per unit at Rated voltage)		4.13
Under voltage setting range (per unit at Rated voltage)		4.14
Synchronizing check element	☐ Yes ☐ No	4.15
Direct Transfer Trip (DTT) interface capability	☐ Yes ☐ No	4.16
Directional Power Element (if 'Yes', answer below. If 'No'. meet additional requirement)	☐ Yes ☐ No	4.17
Minimum detectable reverse current (Amps)		4.18
Time (in millisecond) to detect minimum reverse current		4.19
Total Time[1] required (no delay) to trip off the generator breaker (in millisecond)		4.20

Note 1: Total Time= (cell# 4.6)+(cell# 4.19)+Trip Signal Propagation time. If total time exceeds 160 millisecond, the interconnection may need to meet additional requirement, e.g., minimum import control, Ramp Control, load–generation inter–tie, etc.; however, the total time shall be limited within 2 sec.

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5. Transformer (Step Up) information interfacing with BC Hydro				
Step–up transformer designation as shown on the SLD				5.1
Step–up transformer capacity (kVA)				5.2
Step–up transformer Ph–Ph voltages (kV) (Ph–gnd for 1Ph)	H.V./L.V.			5.3
Step–up transformer configuration (Y.gnd–Delta preferable 3Ph)	H.V./L.V.	-Select one or type in-	-Select One-	5.4
Grounding Transformer if delta on H.V. side (BC Hydro side)? (if 'No', additional requirements may need to be met)				5.5

6. Project attachment

☐ **Project Information Attachment 6.1: Generator Data sheet (Induction/Synchronous/Inverter/PCU)**

Unit Description	Document Title	Document Number with Revision number	Date
Ex.: Inv, Unit 1 & 2	Ex: XYZ inverter datasheet model xxxx	Ex.:ABC–OOO, rev.1	

☐ **Project Information Attachment 6.2: Site Plan**

Attachment Name/Title	Drawing number and Revision number	Date

- The Site Plan should include project title, date and revision number, site address, and the name of person and/or firm that prepared the drawing, Plan view of the site with nearby roads, Location of BC Hydro Point of metering (POM), location of generator/inverter isolation switch, and generator/inverter, Equipment names (which should match the single line diagram), Routing of the overhead and/or underground lines if new load construction and proposed terminal pole or service manhole.

☐ **Project Information Attachment 6.3: Single Line Diagram (SLD)**

Attachment Name/Title	Drawing number and Revision number	Date

- The sealed and signed SLD must include project title, date and revision number, site address and the name of person and/or firm that prepared the drawing, differentiation between new and existing equipment (clouds or dividing lines), POM with interlocking mechanism (if primary metering), all switches, breakers and transformers between the service entrance to the customer premises and the generator with voltage levels. All switches, breakers, and relays must have distinct identifiers or names.
- Instrumentation CT/PT with measurement location, relay with protection functions and the breaker for protection tripping as per section 4, generator disconnect (lockable), primary isolation switch, major control and telecommunications interface with generator.

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☐ **Project Information Attachment 6.4: Intended Operation of Generating Facility Documents/Declaration**

Attachment Name/Title	Drawing number and Revision number	Date

○ The sealed and signed operational document/declaration must include project title, site address and the name of person and/or firm that prepared the document which must include the description of (a) Power flow management control during Normal operating condition, (b) Operation during BC Hydro outage, (c) Load Transition upon restoring the BC Hydro power. The description must be provided in alignment with manufacturer's operating manual. Additional documentation must be made available upon request

7. Engineer of Record declaration

The Engineer of Record declares that the data submitted herein is accurate and meets the requirements of this the latest 35 kV and Below Interconnection Requirements for Power Generators

	Signature	Date
	Print Name	
	Affiliated with and Permit to Practice Number	
Seal of Professional Engineer registered in British Columbia		