Connection Impact Assessment Application Form
Distribution System

This Application Form is for Generators applying for Connection Impact Assessment ("CIA").

It is important that the Generator provides all of the information requested below. Failure to do so could result in the non-acceptance of this application form by Northern Ontario Wires Inc.
All technical documents must be signed and sealed by a licensed Ontario Professional Engineer.

Date: _____ (dd / mm / yyyy)

1. **Project Name:** _____

2. **Project Size:** Number of Units _____
   Nameplate Rating of Each Unit _____ kW
   Generator connecting on ☐ single phase ☐ three phases
   Proposed Total Nameplate Capacity _____ kW

3. **Project Location:** Address _____
   Existing EHM Account _____
   Contract with Energy Retailer [Yes/No] _____
   OPA Reference # (if applicable) _____

4. **Project Information:**
   Generator Single Point of Contact Person _____
   Proposed Start of Construction _____
   Proposed Energization Date _____

	Generator	Owner	Consultant
Company/Person			
Contact Person			
Mailing Address			
Telephone			
Fax			
Email			

5. **Project Type:** ☐ Wind Turbine ☐ Hydraulic Turbine ☐ Steam Turbine ☐ Solar
   ☐ Diesel Engine ☐ Gas Turbine ☐ Fuel Cell ☐ Biomass
   ☐ Co-generation/CHP (Combined Heat & Power)
   ☐ Other (Please Specify) _____

6. **Machine Characteristics:**

   Machine Starting Inrush Current _____

   Rotating Machine Type (if known): ☐ Synchronous ☐ Induction ☐ Other (Please Specify) _____

7. **A completed single line diagram**

Location and Site Plan:

Provide Site Plan with approximate line routings for connection to nearby Northern Ontario Wires Inc.'s facilities. The Site Plan should include roads, concession and lot numbers and nearby power lines.

Drawing / Sketch No. _____, Rev. _____

Connection to Northern Ontario Wires Inc.'s Distribution System (if known):
Proposed connection voltage to Northern Ontario Wires Inc.'s distribution system: _____ kV
Station: _____
Feeder: _____

Single Line Diagram ("SLD"):

Provide a SLD of the Generating Facility including the Interface Point/Point of Common Coupling ("PCC") to Northern Ontario Wires Inc.'s distribution system.
SLD Drawing Number: _____, Rev. _____
Generator Characteristics:

Number of generating unit(s): _____
Manufacturer / Type or Model No: _____ / _____
Rated capacity of each unit: _____ kW _____ kVA
If unit outputs are different, please fill in additional sheets to provide the information.
Rated frequency: _____ Hz
Rotating Machine Type: ☐ Synchronous ☐ Induction ☐ Other (Please Specify) _____
Generator connecting on: ☐ single phase ☐ three phases
Limits of range of reactive power at the machine output:
Lagging (over-excited) _____ kVAR power factor _____
Leading (under-excited) _____ kVAR power factor _____
Limits of range of reactive power at the PCC:
Lagging (over-excited) _____ kVAR power factor _____
Leading (under-excited) _____ kVAR power factor _____
Starting inrush current: _____ pu (multiple of full load current)

For Synchronous Units:
Nominal machine voltage: _____ kV
Minimum power limit for stable operation: _____ kW
Unsaturated reactances on: _____ kVA base _____ kV base
Direct axis sub transient reactance, Xd'' _____ pu
Direct axis transient reactance, Xd' _____ pu
Direct axis synchronous reactance, Xd _____ pu
Zero sequence reactance, X0 _____ pu
Provide a plot of generator capability curve
(MW output vs MVAR)
Document Number: _____, Rev._____

For Induction Units:
Nominal machine voltage: _____ kV
Unsaturated reactances on: _____ kVA base _____ kV base
Direct axis sub transient reactance, Xd'' _____ pu
Direct axis transient reactance, Xd' _____ pu
Total power factor correction installed: _____ kVAR
Number of regulating steps _____
Power factor correction switched per step _____ kVAR
Power factor correction capacitors are automatically switched off when generator breaker opens ☐ Yes ☐ No

Interface Step-Up Transformer Characteristics:

Transformer rating: _____ kVA
Nominal voltage of high voltage winding: _____ kV
Nominal voltage of low voltage winding: _____ kV
Transformer type: ☐ single phase ☐ three phases
Impedances on: _____ kVA base _____ kV base
R _____ pu, X _____ pu

High voltage winding connection: ☐ delta ☐ star
Grounding method of star connected high voltage winding neutral:
☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

Low voltage winding connection: ☐ delta ☐ star
Grounding method of star connected high voltage winding neutral:
☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

Note: The term 'High Voltage' refers to the connection voltage to Hydro One's distribution system, and 'Low Voltage' refers to the generation or any other intermediate voltage.

Intermediate Transformer Characteristics (if applicable):

Transformer rating: _____ kVA
Nominal voltage of high voltage winding: _____ kV
Nominal voltage of low voltage winding: _____ kV
Transformer type: ☐ single phase ☐ three phases
Impedances on: _____ kVA base _____ kV base
R _____ pu X _____ pu

High voltage winding connection: ☐ delta ☐ star
Grounding method of star connected high voltage winding neutral:
☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

Low voltage winding connection: ☐ delta ☐ star
Grounding method of star connected high voltage winding neutral:
☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

Note: The term 'High Voltage' refers to the intermediate voltage that is input to the interface step-up transformer and the 'Low Voltage' refers to the generation voltage.

Load information (if known):

Maximum load of the facility: _____ kVA _____ kW
Maximum load current (referred to the nominal voltage
at the connection point to Hydro One system): _____ A
Maximum inrush current (referred to the nominal voltage
at the connection point to Northern Ontario Wires Inc.'s system): _____ A

Attached Documents:

Item No.	Description	Reference No.	No. of Pages
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Attached Drawings:

Item No.	Description	Reference No.	No. of Pages
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			