

Section 3 – CUSTOMER CLASS SPECIFIC

3.4.2 Technical Information and Considerations

The same information and considerations apply as for other General Service Customers. Refer to Subsection 3.3.3 and 3.3.4 for applicable requirements.

3.5 Embedded Generation Facilities

This section should include all terms and conditions applicable to the connection of embedded generation facility to the distributor (e.g., application process, engineering standards and operating agreements).

The Generator Classifications set forth in the Distribution System Code are outlined in the table below:

Generator Classification	Rating
Micro	≤ 10 kW, for customer's own use
Small	(a) ≤ 500 kW connected on distribution system voltage < 15 kV (b) ≤ 1 MW connected on distribution system voltage ≥ 15 kV
Mid-Sized	(a) > 500 kW but ≤ 10 MW connected on distribution system voltage < 15 kV (b) > 1 MW but ≤ 10 MW connected on distribution system voltage ≥ 15 kV
Large	> 10 MW

3.5.1 Connection Agreement

Section 3.5 does not apply to the connection or operation of an emergency backup generation facility **or an embedded generation facility that is used exclusively for load displacement purposes**. Refer to Subsection 2.3.6 for applicable requirements.

Toronto Hydro shall enter into a Connection Agreement with all existing Customers who have an embedded generation facility connected to the Toronto Hydro distribution system and also with all new Customers prior to connecting a new generation facility. Where Toronto Hydro does not have a Connection Agreement with an existing Customer that has a generation facility connected to the Toronto Hydro distribution system, Toronto Hydro shall be deemed to have an implied contract with the generator. The terms of the implied contract are embedded in this

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Conditions, the rate schedules, Toronto Hydro’s distribution license, the Distribution System Code and the Rate Handbook.

3.5.2 Connection Process

Toronto Hydro has created an “Embedded Generation Connection Overview” which contains the following information:

- (a) the process for having a generation facility connected to the Toronto Hydro distribution system, including any form necessary for the application;
- (b) information regarding any approvals from the ESA, the IESO, OEB, OPA, or a transmitter that are required before Toronto Hydro will connect a generation facility to its distribution system;
- (c) the technical requirements for being connected to the Toronto Hydro distribution system including the metering requirements; and
- (d) the standard contractual terms and conditions for being connected to the Toronto Hydro distribution system.

Subject to all applicable laws, Toronto Hydro will make all reasonable efforts in accordance with the provisions of Section 3.5 to promptly connect to its distribution system a generation facility, which is the subject of an application for connection.

3.5.3 Connection of Micro-Generation Facilities

A person who wishes to connect a micro-embedded generation facility to the Toronto Hydro distribution system shall submit an application to Toronto Hydro providing the following information:

- (a) the name-plate rated capacity of each unit of the proposed generation facility and the total name-plate rated capacity of the proposed generation facility at the connection point;
- (b) the fuel type of the proposed generation facility;
- (c) the type of technology to be used; and
- (d) the location of the proposed generation facility including address and account number where available.

Where the proposed micro-embedded generation facility is located at an existing Customer connection, Toronto Hydro shall, within 15 days of receiving the application, make an offer to connect or provide reasons for refusing to connect the proposed generation facility. Toronto Hydro shall give the applicant at least 30 days to accept the offer to connect and shall not revoke the offer to connect until this time period has expired. Toronto Hydro will not charge the Customer for the preparation of the Offer to Connect.

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Toronto Hydro shall make any necessary metering changes and connect the applicant's micro-embedded generation facility to its distribution system within 5 days of the applicant completing the following:

- (a) Provide Toronto Hydro with a copy of the authorization to connect from the ESA;
- (b) enter into a Connection Agreement with Toronto Hydro in the form set out in Section 6, Reference #2 Schedule B1; and
- (c) pay Toronto Hydro for the costs of any necessary metering changes.

3.5.4 Connection of Other Generation Facilities

Subsection 3.5.4 applies to the connection to the Toronto Hydro distribution system of an embedded generation facility, which is not a micro-embedded generation facility.

After a person who is considering applying for the connection of a generation facility to the Toronto Hydro distribution system has requested a preliminary meeting with Toronto Hydro and has provided the required initial set of information, **then** Toronto Hydro shall provide a time when its relevant employees are available to meet with the person within 15 days of the person requesting the meeting. For the purposes of this section, the following is the required "initial set of information":

- (a) the nameplate rated capacity of each unit of the proposed generation facility and the total nameplate rated capacity of the generation facility at the connection point;
- (b) the fuel type of the proposed generation facility;
- (c) the type of technology to be used; and
- (d) the location of the proposed generation facility including address and account number with the distributor where available.

At the preliminary meeting, Toronto Hydro shall discuss the basic feasibility of the proposed connection including discussing the location of its existing distribution facilities in relation to the proposed generation facility and providing an estimate of the time and costs necessary to complete the connection. Toronto Hydro will not charge for its preparation for and attendance at the preliminary meeting.

A person who wishes to apply for the connection of a generation facility to the Toronto Hydro distribution system shall submit an application, pay their impact assessment costs (**applicable to mid-sized and large generation facilities or small generation facilities where requested by Toronto Hydro**) and provide the following information:

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- (a) any of the “initial set of information” which has not yet been provided to Toronto Hydro;
- (b) a single line diagram of the proposed connection; and
- (c) a preliminary design of the proposed interface protection.

For a **Small embedded generation facility**, where Toronto Hydro believes that a system directly connected to its distribution system may be impacted by the proposed small embedded generation facility, Toronto Hydro will advise the Customer of the costs to conduct any required impact assessments.

Toronto Hydro shall provide the Customer with its results of the impact of the proposed generation facility, a detailed cost estimate of the proposed connection, and an offer to connect within:

- (a) 60 days of the receipt of the application where no distribution system reinforcement or expansion is required; and
- (b) 90 days of the receipt of the application where a distribution system reinforcement or expansion is required.

For a **Mid-sized embedded generation facility**, Toronto Hydro shall provide the Customer with its impact assessment of the proposed generation facility within 60 days of the receipt of the application

For a **Large embedded generation facility**, Toronto Hydro shall provide the Customer with its impact assessment of the proposed generation facility within 90 days of the receipt of the application.

The impact assessment shall set out the impact of the proposed generation facility on the Toronto Hydro distribution system and any of its customers including:

- (a) any voltage impacts, impacts on current loading settings and impacts on fault currents;
- (b) the connection feasibility;
- (c) the need for any line or equipment upgrades;
- (d) the need for transmission system protection modifications; and
- (e) any metering requirements.

The Customer shall submit any material revisions to the design, planned equipment or plans for the proposed generation facility and connection with Toronto Hydro. Toronto Hydro shall then prepare a new impact assessment within the relevant time period as set out above.

In the case of an application for the connection of a mid-sized or large embedded generation facility, after receiving from Toronto Hydro the impact

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assessment the applicant shall pay to Toronto Hydro for the cost of preparing a detailed cost estimate of the proposed connection and enter into an agreement with Toronto Hydro on the scope of the project. Toronto Hydro shall then provide the applicant with a detailed cost estimate and an offer to connect by the later of 90 days after the receipt of payment from the applicant and 30 days after the receipt of comments from a transmitter or other distributor that may have been advised under the following clause.

Within 10 days of receiving payment from the applicant for preparing a detailed cost estimate, Toronto Hydro shall advise any transmitter or distributor whose transmission or distribution system is directly connected to the Toronto Hydro distribution system that it is preparing a detailed cost estimate for a proposed large or mid-sized embedded generation facility. Toronto Hydro will use its discretion in advising impacted transmitter or distributor when the detailed cost estimate involves a proposed small embedded generation facility.

After the applicant has entered into a connection cost agreement with Toronto Hydro and has provided the detailed engineering drawings with respect to the proposal, Toronto Hydro shall conduct a design review to determine if the detailed engineering plans are acceptable.

Toronto Hydro has the right to witness the commissioning and testing of the connection of the generation facility to its distribution system. After the applicant has

- (a) informed Toronto Hydro that it has received all necessary approvals;
- (b) provided Toronto Hydro with a copy of the **Certificate of Inspection** from the ESA; and
- (c) entered into a Connection Agreement.

Upon receipt of the Authorization to Connect from ESA Toronto Hydro shall act promptly to connect the generation facility to its distribution system.

Subject to any delays in commissioning and testing of the generation facility, which may be beyond the control of Toronto Hydro, Toronto Hydro shall connect a proposed small embedded generation facility within:

- a) 60 days of the applicant taking the steps set out above, where no distribution system reinforcement or expansion is required; and
- (b) 180 days of the applicant taking the steps set out above, where a distribution system reinforcement or expansion is required.

For Small, Mid-sized, and Large embedded generation facility, the Connection Agreement shall be in the form set out in Section 6, Reference # 2, Schedule B2

Information on the process for connecting a generation facility to a distribution system is set out in Appendix F.1 of the DSC.

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3.5.5 Technical Requirements

The Customer shall ensure that the connection of its generation facility to the distribution system does not materially adversely affect the safety, reliability and efficiency of the Toronto Hydro distribution system. New or significantly modified generation facilities shall meet the technical requirements specified in Appendix F.2 of the DSC. In addition, the Customer shall also comply with the detailed requirements outlined in Section 6, **Reference #3** - “Toronto Hydro Parallel Generation **Requirements**”.

The Customer with an embedded generation facility connected to the Toronto Hydro distribution system (other than a micro-embedded generation facility) shall reimburse Toronto Hydro for any damage to the distribution system or increased operating costs that may result from the connection of a generation facility.

A Customer with a generation facility connected to the Toronto Hydro distribution system shall include in the connection agreement and upon request by Toronto Hydro provide satisfactory evidence of a regular, scheduled maintenance plan that ensures that the generator’s connection devices, protection systems and control systems are maintained in good working conditions.

All equipment that is connected, operated, procured or ordered before May 1, 2002 is deemed to be in compliance with the technical requirements of the DSC.

Toronto Hydro may determine that equipment that was deemed to be in compliance with the technical requirements of the DSC as noted in the immediately preceding paragraph is not in **actual** compliance with the technical requirements due to any of the following conditions:

- (a) a material deterioration of the reliability of the distribution system resulting from the performance of the generator’s equipment; or
- (b) a material negative impact on the quality of power of an existing or a new customer resulting from the performance of the generator’s equipment; or
- (c) a material increase in generator capacity at the site where the equipment deemed compliant is located.

In such a case, Toronto Hydro will provide the Customer with rules and procedures for requiring such equipment to be brought into actual compliance. The Customer shall then bring its equipment into actual compliance with the technical requirements and within a reasonable time period specified by Toronto Hydro.

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When a Customer with an embedded generation facility is connected to the Toronto Hydro distribution system, the Customer shall provide an interface protection that is capable of automatically isolating the generation facility from the Toronto Hydro distribution system under the following situations:

- (a) internal faults within the generator
- (b) external faults in the Toronto Hydro distribution system
- (c) certain abnormal system conditions, such as over/under voltage, over/under frequency.

The Customers shall disconnect the embedded generation facility from the Toronto Hydro distribution system when:

- (a) a remote trip or transfer trip is included in the interface protection, and
- (b) the Customer effects changes in the normal feeder arrangements other than those agreed upon in the operating agreement between Toronto Hydro and the Customer.

3.5.6 Net Metering Program for an Embedded Generation Facility

As a way to encourage conservation, Toronto Hydro has established a Net Metering Policy for eligible customers wishing to participate in the Net Metering program. Eligible customers with specific generation facilities may reduce their net energy costs by exporting surplus generated energy back onto the utility distribution system for credit against the energy the customer consumes from the distribution system.

Participation in the Net Metering Program is available to all Toronto Hydro customers with a generator that meet all of the following conditions:

1. The electricity is generated primarily for the customer's own use;
2. The electricity generated is conveyed to the customer's own consumption point without reliance on the Toronto Hydro distribution system;
3. The maximum cumulative output capacity of the generator does not exceed 500 kW; and
4. The electricity is solely generated from a renewable energy source (such as wind, drop in water elevation, solar radiation, agricultural bio-mass, or any combination thereof).

In order to participate in the Net Metering program, the customer will be required to meet all the parallel generation requirements for Connecting Micro-Generation Facilities (10 kW or less) or Other Generation Facilities (greater than 10 kW and less than 500 kW), as applicable to the generator size, as found in Section 3.5 - Embedded Generation Facilities

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The customer must have a bi-directional revenue meter that records energy flow in both directions.

In accordance with the Net Metering Regulation, Toronto Hydro has established a Net Metering Program regarding the netting of surplus generated energy with energy consumed from the Toronto Hydro supply. This program, as amended from time to time, is posted on the Toronto Hydro website and can be downloaded from http://www.torontohydro.com/generation_connection/net_metering_program

3.5.7 Ontario Power Authority (OPA) Standard Offer Program for an Embedded Generation Facility

In conjunction with the OPA Standard Offer Program (SOP), Toronto Hydro has established its policy to encourage and promote greater use of renewable energy sources such as wind, solar, photovoltaic (PV), renewable biomass, bio-gas, bio-fuel, landfill gas, or drop in water elevation for generating electricity. Renewable energy electricity generation projects with a capacity of 10 MW or less that meets the program's requirements may be connected to Toronto Hydro Electric System for exporting electricity.

In most circumstances, generating facilities participating in the Standard Offer Program will connect directly to Toronto Hydro Electric System at a voltage of 27.6 kV or less. Output from the generating facility shall be metered as follows:

- a. For generators of 10 kW or less and connected to the line side of the load meter, a bi-directional kWh meter is required to measure energy consumed and energy exported.
- b. For all other generators, an interval meter is required

The generator will be solely responsible for any costs associated with the connection to the Toronto Hydro distribution system and any required metering installation.

The Toronto Hydro's policy for the OPA Standard Offer Program is posted, as amended from time to time, on the Toronto Hydro website and can be downloaded from <http://www.torontohydro.com/conditionsofservice>

3.6 Wholesale Market Participant

Criteria for a Customer that is classified as being a Market Participant needs to be established. This section should describe any specific requirements for Customers that also are Market Participants.