



Hydro One Networks Inc.  
Distribution Customers  
Conditions of Service

January 1, 2015

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## SECTION 1 INTRODUCTION

These Conditions of Service describe Hydro One Networks Inc.'s ("Hydro One") operating practices and connection policies and set out the terms and conditions upon which Hydro One offers and the Customer accepts Distribution Services.

Terms contained in these Conditions of Service or in any contract for the supply of electricity by Hydro One shall not prejudice or affect any rights, privileges, or powers vested in Hydro One by law under any federal or Ontario statute or any regulations thereunder.

The definitions of terms used in these Conditions of Service appear in section 4.0. Capitalized expressions used in these Conditions of Service have the meaning ascribed in that section.

### 1.1. Identification of Distributor and Service Area

Hydro One is a corporation incorporated under Ontario's *Business Corporations Act* and an electricity Distributor licensed by the OEB to distribute electricity in the service area described in Hydro One's Distribution Licence, ED-2003-0043 (the "Licence"). Hydro One's service area may be changed from time to time by the OEB.

Details of the Licence may be viewed at [www.HydroOne.com](http://www.HydroOne.com).

### 1.2. Related Codes and Governing Laws

Hydro One and the Customer shall comply with all Applicable Laws, including the provisions of the latest editions of the following documents:

- (i) *Electricity Act*;
- (ii) *Ontario Energy Board Act*;
- (iii) the Licence;
- (iv) Affiliate Relationships Code for Electricity Distributors and Transmitters;
- (v) Distribution System Code;
- (vi) Retail Settlement Code;
- (vii) Standard Supply Service Code; and
- (viii) Relevant Rate Orders.

If there is a conflict between these Conditions of Service and any of the above, the documents listed above shall govern in order of priority indicated above. If there is a conflict between these Conditions of Service and a Connection Agreement executed by the Customer and Hydro One; the Connection Agreement shall govern. The fact that a condition, right, obligation, or other term appears in these Conditions of Service but not in any of the documents listed above or in a

Connection Agreement shall not be interpreted as a conflict or be deemed grounds for finding a conflict.

Customers and their agents planning and designing for electricity service must refer to all applicable provincial and Canadian electrical codes and all applicable federal, provincial, and municipal laws, regulations, codes and by-laws to ensure compliance with their requirements. All work shall be conducted in accordance with the latest edition of Ontario's *Occupational Health and Safety Act* (OHSA) and, where applicable, the Regulations for Construction Projects and the harmonized Electrical and Utility Safety Association (E & USA) Rule Book.

### **1.3. Interpretations**

In these Conditions of Service:

- (i) Words importing the singular include the plural and vice versa;
- (ii) the use of one gender includes the other;
- (iii) the word "person" includes not only a natural person but also a firm, a body corporate, an unincorporated association and an authority;
- (iv) the word "its" may mean "his", "her" or "their";
- (v) the words "including", "include(s)" and "included" shall be interpreted as being without limitation;
- (vi) a reference to a person includes a reference to the person's heirs, executors, administrators, successors, substitutes (including, but not limited to, persons taking by novation) and assigns;
- (vii) an agreement, representation or warranty on the part of or in favour of two or more persons binds or is for the benefit of them jointly and severally;
- (viii) specified periods of time refer to business days, and the number of days from a given day or the day of an act or event is to be calculated exclusive of the given day or day of the act or event;
- (ix) a reference to a day is to be interpreted as the period of time commencing at midnight and ending 24 hours later and does not include weekends and Public Holidays;
- (x) where "meter read or reading" is used in this document, it means the collection of data either manually, automatically or remotely;
- (xi) a reference to a document or a provision of a document includes any amendment or supplement to, or any replacement of, that document or that provision of that document; and
- (xii) Headings are for convenience only and shall not affect the interpretation of these Conditions of Service.

### **1.4. Amendments and Changes**

The provisions of these Conditions of Service and any amendments made from time to time form part of the contract between Hydro One and any connected

Customer, Retailer, or Generator, and these Conditions of Service supersede all previous Conditions of Service, oral or written, of Hydro One and any of its predecessor municipal electric utilities as of the effective date (Section 1.11) of these Conditions of Service.

In the event of changes to these Conditions of Service, Hydro One will issue an advance public notice with the Customer's bill as per Section 2.4.8 of the Distribution System Code. Customers will have ten (10) days, from receipt of the notification, to provide comments through the contacts identified in the public notice.

The Customer is responsible for contacting Hydro One to obtain the current version of these Conditions of Service. Hydro One may charge a reasonable fee for providing the Customer with a copy of these Conditions of Service. The current version of the Conditions of Service is posted on the Hydro One Web site and may be downloaded from: [www.HydroOne.com](http://www.HydroOne.com).

## **1.5. Contact Information**

For general inquiries, Hydro One can be reached during its normal business hours: Monday to Friday from 7:30 am to 8 pm. E.T. at 1-888-664-9376, by e-mail at [CustomerCommunications@HydroOne.com](mailto:CustomerCommunications@HydroOne.com) or by writing to:

Hydro One Networks Inc.  
P.O. Box 5700  
Markham, Ontario  
L3R 1C8

*For emergency purposes, Customers can call Hydro One at 1-800-434-1235, twenty four (24) hours per day, seven (7) days per week, or the number shown on the Customer's bill.*

## **1.6. Customer Rights and Obligations**

### **A. Accuracy of Information**

Hydro One may request certain information from the Customer including the Customer's credit report, driver's licence number, property tax bill, articles of incorporation and/or business registration, as appropriate. Customers have the obligation to provide Hydro One with information that is true, complete, and correct. The information is used to provide Customer service, deliver and/or supply energy, manage Customer accounts and assess credit history regarding the need for a security deposit. Hydro One may, at any time, verify the accuracy of all information provided and may obtain additional credit information from a credit-reporting agency as required. If Hydro One is unable to establish the identity of the Customer based upon the information provided by the Customer,

Hydro One may disconnect the Customer in accordance with Section 2.2 of these Conditions of Service.

## **B. Space and Access**

The Customer shall provide Hydro One, free of charge or rent, with a convenient and safe place for Hydro One's Facilities and Equipment, for example, a Meter Installation, on the Customer's premises and/or Customer Equipment. Hydro One assumes no risk thereby and under no circumstances will Hydro One be liable for any damages resulting from, arising out of or related to the presence of the Hydro One Facilities and Equipment.

The Customer shall not allow anyone other than an employee or authorized agent of Hydro One, or a person lawfully entitled to do so, to repair, remove, replace, alter, inspect or tamper with the Hydro One Facilities and Equipment on the Customer's premises and/or Customer Equipment.

In addition to Hydro One's rights under Section 40 of the *Electricity Act*, Hydro One employees and Hydro One's authorized agents may enter the Customer's property at any time for any of the following purposes:

- (i) install, inspect, read, calibrate, maintain, repair, alter, remove, or replace all or any part of a Meter Installation;
- (ii) inspect, maintain, repair, alter, remove, replace, or disconnect wires or other facilities used to transmit or Distribute electricity;
- (iii) inspect, maintain, repair, alter, remove, and replace Hydro One Facilities and Equipment, such as sentinel lights; and
- (iv) perform switching operations or interrupt the Customer's supply to maintain or improve the supply system or to provide new or upgraded services to other Customers.

Hydro One will use reasonable efforts to exercise this power of entry during normal business hours. The Hydro One employee or authorized agent exercising this power of entry will identify himself with proper identification upon request.

Where Hydro One has requested key access for Meter Installations or meter rooms inside the Customer's premises, key access shall be provided to Hydro One. Any exceptions to this requirement are subject to Hydro One's written approval. Hydro One may require that a Customer relocate an inaccessible Meter Installation to an accessible location at the Customer's expense.

## **C. Customer Equipment**

The Customer is responsible for installation and maintenance of Customer Equipment, including vegetation maintenance around the Customer's power lines.

Customer Equipment includes, but is not limited to, power lines, poles and the base of the meter.

The Customer is responsible for ensuring that all Customer Equipment complies with all Applicable Laws, including, but not limited to, the Electrical Safety Code and is properly identified and connected for metering and operation purposes. Where applicable, Customer Equipment shall be subject to the reasonable acceptance of Hydro One and the approval of the Electrical Safety Authority. Hydro One's approval of any Customer Equipment is solely for the purposes of Hydro One's protection of the Distribution System. The Customer is solely responsible for protecting its own property.

The Customer shall inspect the Customer Equipment at regular intervals. Clearances must conform to the Electrical Safety Code. The Customer shall repair or replace, in a timely fashion, any Customer Equipment, including, but not limited to, poles and transformer pads, that may affect the safety, integrity or reliability of the Distribution System. If the Customer does not take such action within the time specified by Hydro One, Hydro One may disconnect the supply of power to the Customer. Hydro One's policies and procedures with respect to the disconnection process are further described in these Conditions of Service.

If the Customer does not carry out its repairs within a reasonable time, or the repairs are not considered adequate by Hydro One or an inspection authority, Hydro One may disconnect the supply of electricity to the Customer and/or carry out the repairs at the Customer's expense, and Hydro One shall not be liable to the Customer for any damages arising as a result thereof, other than physical damage to the Customer Equipment arising directly from entry on the Customer's property.

Customers wishing to install or remove Neutral Ground Resistors (NGR) on the secondary side of the service transformer shall inform Hydro One of their intentions and obtain Hydro One's permission before proceeding (see section 2.3.7.1 E, Secondary Metering – Neutral Ground Resistor).

Customers shall ensure that their electrical equipment does not cause any unacceptable voltage fluctuations, voltage unbalance, harmonics, or other disturbances that could negatively affect other Customers connected to the Distribution System, or Hydro One Facilities and Equipment. See section 2.3.3 for additional details on electrical disturbances and customer responsibilities.

#### **D. Tree and Vegetation Management**

Subject to any prior agreements, Customers are responsible for all initial and continuing tree trimming, tree and brush removal for all new and existing Secondary and Primary Services on a Customer's property. Clearances must conform to the Electrical Safety Code. For distribution or sub-transmission lines built by the Customer, and where ownership is to be transferred to Hydro One



upon Connection, the clearances must conform to Distribution Standards. Hydro One strongly recommends that a certified utility arborist or a qualified electrical contractor be hired for this work. Refer to Section 2.1.2 E for sources.

**E. No Charge Outage for Upgrade or Maintenance of Customer Equipment for Safety Reasons**

Hydro One will, upon at least ten (10) days' prior notice from the Customer, once each calendar year during normal business hours, disconnect and reconnect the Customer's service without charge, for the Customer to upgrade or maintain Customer Equipment for safety reasons, including, but not limited to, the safe clearance of trees and vegetation from Customer lines.

**F. Responsibility for Damage to Hydro One Facilities and Equipment**

Hydro One Facilities and Equipment located on the Customer's premises and/or Customer Equipment are in the care of and at the risk of the Customer. If any of Hydro One's Facilities and Equipment are damaged or destroyed by fire or any other cause other than ordinary wear and tear, the Customer shall pay Hydro One either, at Hydro One's sole discretion, the value of said Hydro One Facilities and Equipment or the cost of repairing or replacing same.

The Customer shall not build, or cause to be built, plant, place or maintain any structure, tree, shrub or landscaping or other thing that a Customer, acting reasonably, would or could know may result in the obstruction of access to, the operation of (including, but not limited to, the ability to manually, automatically or remotely read a Metering Installation) or endanger all or any part of the Hydro One Facilities and Equipment, interfere with the proper and safe operation of all or any part of the Hydro One Facilities and Equipment or all or any part of the Distribution System or any part thereof or affect Hydro One's compliance with any Applicable Laws. If the Customer does not remove the structure, tree, shrub or landscaping or other thing that would or could obstruct access to, the operation of (including, but not limited to, the ability to manually, automatically or remotely read a Metering Installation) or endanger all or any part of the Hydro One Facilities and Equipment, interfere with the proper and safe operation of all or any part of the Distribution System or affect Hydro One Facilities and Equipment or all or any part of the Distribution System or affect Hydro One's compliance with any Applicable Laws, Hydro One may disconnect the supply of electricity to the Customer and/or carry out the removal of the structure, tree, shrub, landscaping or other thing at the Customer's expense, and Hydro One shall not be liable to the Customer for any damages arising as a result thereof, other than physical damage arising directly from entry on the Customer's property.

**G. Direction to Make Corrective or Preventative Action**

Hydro One may direct a Customer connected to the Distribution System to take corrective or preventive action on the Customer's electric system when there is a

direct hazard to the public or the Customer is causing or could cause adverse effects to the reliability of the Distribution System.

#### **H. Testing Customer's Load**

The Customer shall allow Hydro One to install and use meters and other equipment to conduct tests to determine the electrical characteristics of the Customer's load.

#### **I. Automatic Reclosing Facilities**

In order to restore the Distribution System, Hydro One installs facilities for automatic reclosing of circuit breakers and reclosers, and from time to time may change the reclosing time of any such reclosing facilities. The Customer shall be responsible for providing at his own expense:

- (a) adequate protective equipment for any electrical apparatus which might be adversely affected by reclosing facilities; and
- (b) such equipment as may be required for the proper reconnection of any apparatus or equipment of the Customer, without adversely affecting the proper functioning of the reclosing facilities.

#### **J. Registration/Deregistration as a Wholesale Market Participant**

In order for Hydro One to make the necessary changes to its billing systems, Customers who wish to register or de-register with the Independent Electricity System Operator (IESO) as a Wholesale Market Participant shall notify Hydro One in writing at least sixty (60) days in advance and complete the necessary documentation.

#### **K. Accounts with more than one Person**

If an account is opened in more than one person's name, all such persons are Customers and are jointly and severally responsible for compliance with these Conditions of Service and to pay the Rates and charges in accordance with these Conditions of Service.

### **1.7. Hydro One's Distributor Rights**

#### **A. Access to Customer Property**

Hydro One shall have access to Customer's property in accordance with section 40 of the *Electricity Act*.

#### **B. Tree and Vegetation Management and Removal of Obstructions**

To ensure public safety and the continued reliable operation of the Distribution System Hydro One maintains its rights of way on a continued and cyclical basis.

The timing of this periodic re-clearing of existing rights of way is determined by system assessments, rights of way limitations, storm damage, diseased trees, and vegetation type. Re-clearing of rights of way typically affects trees and vegetation on private property. Hydro One will notify and discuss the planned re-clearing of existing rights of way with property owners prior to performing the work in order to mitigate the impacts to the environment and the property. However, in the event of emergencies, Hydro One may be unable to notify the property owner prior to performing the work.

In any event, pursuant to subsection 40(4) of the *Electricity Act*, Hydro One may enter any land for the purpose of cutting down or removing trees, branches or other obstructions, if in the opinion of Hydro One, it is necessary to do so to maintain the safe and reliable operation of the Distribution System.

### **C. Ability to Transfer Arrears From One Account to Another**

Hydro One shall have the right to transfer arrears for Distribution Services, electricity supplied, or other services provided by Hydro One from one account in a Customer(s) name to any other account in that same Customer(s) name irrespective of rate classification or whether either account is in the name of other person(s) in addition to the Customer.

## **1.8. Disputes**

Initial contacts for Customer complaints should be made by calling Hydro One at 1-888-664-9376 during normal business hours, Monday to Friday from 7:30 a.m. to 8 p.m. E.T. Customer complaints that cannot be resolved by calling this number will be escalated to Hydro One's Customer Relations Centre (CRC), which will serve as the primary point of contact with Hydro One. A member of the CRC will make contact with the Customer, coordinate internal complaint activities, research, investigate, and follow up (when necessary) on the complaint to ensure resolution and closure.

In the event that issues cannot be resolved between Hydro One and the Customer, complaints can be escalated to a third party complaints resolution service provider approved by the OEB. Until such time as the OEB approves an independent third party, the OEB will assume this role.

## **1.9. Liability**

Hydro One shall be liable to a Customer and a Customer shall be liable to Hydro One only for any damages that arise directly out of the wilful misconduct or negligence of:

- (i) Hydro One in providing Distribution Services to the Customer;
- (ii) the Customer in being connected to the Distribution System; or

- (iii) Hydro One or the Customer in meeting their respective obligations or exercising their respective rights under these Conditions of Service, their licences and any other Applicable Laws.

Notwithstanding the above, neither Hydro One nor the Customer shall be liable under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for any indirect, consequential, incidental or special damages, including but not limited to punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, tort or otherwise.

### **1.10. Force Majeure**

Other than for any amounts due and payable by the Customer to Hydro One or by Hydro One to the Customer, neither Hydro One nor the Customer shall be deemed to have committed an event of default in respect of any obligation under these Conditions of Service if prevented from performing that obligation, in whole or in part, because of a Force Majeure Event.

Hydro One shall not be liable for any delay or failure in the performance of any of its obligations under these Conditions of Service due to any Force Majeure Event.

If a Force Majeure Event prevents either party from performing any of its obligations under these Conditions of Service, that party shall:

- (i) other than for Force Majeure Events related to Acts of God, promptly notify the other party of the Force Majeure Event and a good faith assessment of the effect that the event will have on the former party's ability to perform any of its obligations. If the immediate notice is not in writing, it shall be confirmed in writing as soon as reasonably practical;
- (ii) not be entitled to suspend performance of any of its obligations under these Conditions of Service to any greater extent or for any longer time than the Force Majeure Event requires it to do;
- (iii) use its best efforts to mitigate the effects of the Force Majeure Event, remedy its inability to perform, and resume full performance of its obligations;
- (iv) keep the other party continually informed of its efforts; and
- (v) other than for Force Majeure Events related to Acts of God, provide written notice to the other party when it resumes performance of any obligations affected by the Force Majeure Event; and
- (vi) if the Force Majeure Event is a strike, lockout or other labour dispute involving Hydro One's employees or authorized agents, Hydro One shall be entitled to discharge its obligations to notify its Customers in writing by means of placing a notice in the local newspaper, and, notwithstanding (iii) above, the settlement of any

strike, lockout or labour dispute involving Hydro One's employees or authorized agents shall be within the sole discretion of Hydro One or its authorized agents, none of whom shall be under any of the obligations in (iii) above.

### **1.11. Coming Into Force**

These Conditions of Service are effective as of January 1, 2015.

## **SECTION 2        DISTRIBUTION ACTIVITIES – GENERAL**

### **A.    Cable Locates**

Upon request, Hydro One will locate, if able, all Hydro One-owned secondary and primary underground cables connected to its Distribution System without charge.

Cables installed on private property, serving the Customer and connected to the Hydro One Distribution System, will be located, to the extent that Hydro One is able to do so, at no charge to the Customer up to the point where the Customer or the Customer's contractor can safely isolate the balance of the service.

If Hydro One is unable to locate a Customer-owned cable which is connected to its Distribution System, Hydro One will provide, at the Customer's request, a service disconnection and reconnection for the Customer during normal working hours without charge. Hydro One will charge for underground cable locates outside normal business hours, other than in an Emergency situation.

In the interests of public safety, Customers, contractors and other third parties are advised that cables owned by other parties will not be located by Hydro One, and parties should obtain information from the owners of such cables.

If a customer requires Hydro One-owned secondary and primary underground cables connected to its Distribution System to be located then the Customer can request a cable locate through Ontario One Call in the following ways:

- Call Ontario One Call at 1-800-400-2255
- Submit an e-ticket at [www.on1call.com](http://www.on1call.com)

For more information visit

<http://www.hydroone.com/MyHome/StaySafe/Pages/Callbeforeyoudig.aspx>

This contact information is accurate as of the effective date of this Conditions of Service, May 21, 2013, but may change from time to time.

### **B.    Fault Locates and Repairs**

Hydro One will normally locate and repair faults on all Hydro One-owned service cables without charge. In the event that a fault and/or damage is caused by the Customer or third party, the costs of repair shall be paid by the party responsible.

In the event that structures, pavement, or landscaping make the cable inaccessible for repair, the Customer shall provide, at their cost, all civil work, supports, vegetation and landscaping associated with any repair or replacement of the failed cable.

### C. Motors and Welders

The maximum acceptable rating for a motor or combination of motors that may be started simultaneously at full voltage across the line is:

| <b><u>Voltage Level</u></b> | <b><u>Maximum Rating</u></b> |
|-----------------------------|------------------------------|
| 120 V                       | 2 HP                         |
| 240 V                       | 4 HP                         |
| 120/208 V                   | 6 HP                         |
| 347/600 V                   | 8 HP                         |

Where the simultaneous motor load is more than allowable for simultaneous starting at full voltage across the line, the Customer shall use reduced-voltage starters that are acceptable to Hydro One.

Motors and welders in excess of the following thresholds are subject to approval by Hydro One:

Welder size exceeds 30 kVA

Motor size exceeds the following levels:

| <b>Voltage Level</b> | <b>1-phase motor</b> | <b>3-phase motor</b> |
|----------------------|----------------------|----------------------|
| 16/27.6 kV           | > 20 hp              | > 100 hp             |
| Below 16/27.6 kV     | > 10 hp              | > 25 hp              |

## 2.1. Connections

### A. Early Consultation

The Customer shall submit to Hydro One, well in advance of commencement of construction, the following information:

- (i) required in-service date;
- (ii) service entrance capacity and voltage rating of the service entrance equipment;
- (iii) detailed information on heating equipment, air conditioners and any other appliances and/or equipment that demands a high consumption of electrical energy;

- (iv) detailed information, as per application forms for the connection of an Embedded Generation Facility, for all generators being connected in parallel with the Distribution System;
- (v) survey plan or site plan, at the request of Hydro One indicating the proposed location of the service entrance equipment with respect to public rights-of-way and property lot lines;
- (vi) all information required to set up an account for billing purposes; and
- (vii) additional information as noted on the Hydro One Web site at [www.HydroOne.com](http://www.HydroOne.com) or specified by Hydro One, in writing.

## **B. Common Service Taps**

Customers shall provide, at their expense and in compliance with the Electrical Safety Code, a secondary or primary pole or an underground primary voltage line, for common service taps. Hydro One will supply two neighbouring Customers from the same Customer-supplied facility (common service taps) only when the following conditions are met:

- (i) the Customers and Hydro One agree on the location of the portion of the Customer's supplied and built facility to be owned by Hydro One ("Common Line");
- (ii) the Common Line is located on property owned by one or both of the neighbouring Customers;
- (iii) the Common Line to be owned by Hydro One is built to Hydro One's Distribution Standards;
- (iv) the Common Line is transferred with easements and tree-clearing rights to Hydro One for a nominal fee; and
- (v) an access road is provided when requested by Hydro One.

If all the above conditions cannot be met, each Customer shall supply, install, and own a separate line on its own property, or the Customers shall agree amongst themselves, to share the Customer-owned line.

## **C. Temporary Connections**

If a Customer requires temporary service, the two types and applicable charges are as follows:

- (i) temporary service that at a later date is to be relocated to a permanent service site: a standard temporary service fee is charged.
- (ii) temporary service that has a finite Connection and cancellation time period, for example, service to construction sites: The material cost of the transformation and metering will be provided by Hydro One without charge. All other labour and material costs



to install and remove the service will be paid by the Customer based on Hydro One's actual costs.

**D. Service to Sub-transmission Customers – Exclusive of Embedded Distributor**

Service to Sub-transmission Customers, provided at voltages above 13 kV, may be a Basic Connection or an Expansion. However, transformation, secondary conductor or a credit for secondary conductor is not provided by Hydro One. A MIST Meter is required for all new Sub-transmission Customers and when an Expansion is required, the Sub-transmission Customer shall contribute to the cost, such contribution to be determined by Hydro One using a discounted cash flow model in compliance with Appendix B of the Distribution System Code.

**E. Embedded Distributor**

Transformation and conductor are not provided for an Embedded Distributor. A MIST Meter is required for all Connections and is provided either by the Embedded Distributor or by Hydro One, in which latter case the Embedded Distributor may be required to contribute to the cost, as calculated by Hydro One.

**F. Embedded Generation Facility**

A Generator is responsible for all cost of connection of an Embedded Generation Facility, and, if applicable, any required changes to the Distribution System, unless the changes needed are an Expansion investment that does not exceed the Renewable Energy Cost Cap, or a Renewable Enabling Improvement required for the connection of a Renewable Energy Generation Facility, which is the subject of an application for connection to the Distribution System after October 21, 2009.

When an Expansion is required to connect an Embedded Generation Facility, Hydro One will perform an economic evaluation in compliance with sections 3.2.5, 3.2.5A and 3.2.5B of the Distribution System Code.

**G. Central Metered Services**

At the request of a Customer, Hydro One may, at its discretion, supply a Single-Phase Customer with a central metering service to two or more buildings. The Customer shall:

- (i) pay the difference between the cost of the central metering and the meter that Hydro One would have provided to the Customer under the Standard Supply Code;
- (ii) comply strictly with the Electrical Safety Code and Hydro One's Distribution Standards;
- (iii) have an appropriately sized main disconnect and equipment for each service connected to the central metering service; and

- (iv) supply and install, at its own expense, all conductor, poles, and underground conductor, as required on its private property.

The maximum number of services to be connected at the central metering point is four. Additional services must be connected downstream of the central metering point.

Where Hydro One requires that a Customer install the central metering, the costs set out in Section 2.3.7 shall apply.

#### **H. Primary Metered Services**

When a Customer requests a Primary Metered Service (connected at the primary voltage level) or the design of the layout makes secondary metering impractical, the Customer shall install, own, and maintain, at its own expense, the entire distribution system required downstream from the metering point, including conductors, poles, and transformation. Customers requiring non-standard secondary voltages are responsible for the incremental cost of primary metering over the cost of the non-standard secondary metering.

Secondary metering is considered practical when the Customer's entire load can be metered on the secondary side of the transformation.

#### **I. Mobile Home Parks**

Parks containing Mobile Homes or Land Leased Community Homes that meet the Planning Act are treated like a subdivision. Hydro One will install and own the Distribution System, subject to the terms of the economic assessment and the Distribution System Code.

Hydro One will own the primary Distribution System only under the following conditions:

- (i) there is a registered plan of subdivision;
- (ii) construction is to Hydro One's design standards; and
- (iii) easements and cutting rights are granted to Hydro One for all primary lines.

#### **J. Travel Trailer Parks (Intermittent/Seasonal Use)**

The park authority/owner will provide, own, and maintain all distribution facilities, including transformers and individual metering as required, within the park boundary. Such facilities will be subject to the approval of the Electrical Safety Authority. All electricity supplied for park services will be combined and billed under one General Service account. If a Secondary Metered Service is not practical, a Primary Metered Service will be required at or near the park property limit.

## **K. Existing Parks**

For existing parks where Hydro One owns, as of the date of these Conditions of Service, the transformers on the Customer's distribution line and the Secondary Metered Service within the park boundary, Hydro One will continue to own these facilities, provided that no new services are added.

When the park owner requests an increase in the size of the services, additional services within the park or such additional services are required, the park owner must choose one of the following:

- 1) Park distribution system owned by park owner:
  - (i) the park owner will, subject to OEB approval, purchase the existing distribution facilities owned by Hydro One within the park boundary. If the park owner does not purchase the existing park facilities, the park owner may choose to replace the existing park facilities at its own expense and will own the new facilities;
  - (ii) the park owner shall supply and install new distribution facilities including transformers, etc., as required for the addition;
  - (iii) Hydro One shall remove existing Secondary Metered Service, install a Primary Metered Service at or near the Customer's property limit without charge, and consolidate existing contracts into one General Service account;
  - (iv) park owners of privately-owned systems shall meet all the requirements of the Electrical Safety Authority, or
- 2) Park distribution system transferred to Hydro One:
  - (i) the park owner must have a plan of subdivision registered or approved by the municipality;
  - (ii) the park owner will have the distribution system within the park brought up to Hydro One's design standards and transfer the ownership of the distribution system with required easements and cutting rights to Hydro One for a nominal fee; and
  - (iii) the park owner shall also provide a site plan with all poles and electrical equipment surveyed.

## **L. Service and Supply Locations**

Hydro One reserves the right to determine the service supply and Connection locations. The Customer shall obtain Hydro One's approval prior to the construction of electrical facilities.

One service layout or estimate is normally provided without charge. The Customer shall pay a fee to Hydro One if the Customer changes any of its

Connection requirements after the initial layout or estimate is provided or the Customer requests another estimate or layout for the same Connection.

#### **M. Number of Delivery Points**

Normally Hydro One permits only one Delivery Point per property. Where it is not technically feasible or creates excessive costs to the customer to have only one Delivery Point and sufficient capacity is available to supply this addition and future expected load growth, Hydro One may, in its sole discretion, connect additional Delivery Point(s) on the same property. Each Delivery Point must be separately metered and billed at the appropriate rate classification. The Customer will be responsible for all costs of the new delivery point and the combined capacity of the delivery points shall not exceed the delivery point capacity stated below unless agreed to by Hydro One.

#### **N. Delivery Point Capacity**

The maximum size of Primary Service or Secondary Service at any Delivery Point is as follows:

- (i) for a Single Phase Customer Connection: 167 kVA of transformation capacity, Customers that require service above 167 kVA must either install or convert to a three-phase service
- (ii) for a Three Phase Customer Connection:
  - (a) if the Distribution voltage is 13 kV or less: 501 kVA of transformation capacity
  - (b) if the Distribution voltage is above 13 kV or a situation exists such as the Distribution Network being supplied from a Distribution Station that is directly connected to a high voltage Transmission Line, the maximum size is determined by Hydro One based on system configuration and capability.

#### **O. Transformation - Overhead Transformers**

The maximum overhead transformer sizes for standard secondary voltages provided by Hydro One are:

- (i) for a Single Phase overhead Customer Connection: 167 kVA;
- (ii) for a Three Phase Customer Connection: 501 kVA.

Customers requiring non-standard secondary voltages and connection voltages above 27.6kV will be responsible for installing, owning, maintaining and operating their own transformer. Customer-supplied transformers shall be properly sized, acceptable to Hydro One and meet the energy efficiency standards in CSA C802.1.

**P. Transformation - Pad- Mounted Transformers (underground type)**

Maximum transformer sizes supplied by Hydro One are:

- (i) for Single Phase Customer Connection: 167 kVA
- (ii) for a Three Phase Customer Connection: 500 kVA (Y-Y)

Customers requesting underground pad-mounted type transformers will pay the difference in material and installation costs between the overhead installation and the underground installation, and will supply and install at the Customer's expense an appropriate transformer pad. The Customer should contact Hydro One for further information on transformer pads.

Customers which require non-standard secondary voltages and connection voltages above 27.6kV shall install, own, maintain and operate their own pad-mounted transformer and will be entitled to a Customer-supplied transformation allowance. Customer-supplied transformers shall be properly sized, acceptable to Hydro One and meet the energy efficiency standards in CSA C802.1.

**Q. Transformation - Station Transformers**

Where Customers require transformation capacity in excess of the sizes noted above, the Customer shall supply the station site, pad, transformers, fencing, structure, and distribution line on Private Property in accordance with the Electrical Safety Code. Customer-supplied transformers shall be properly sized, acceptable to Hydro One and meet the energy efficiency standards in CSA C802.1

The high voltage protection of a Customer-supplied transformer(s) shall co-ordinate with the Distribution System protection.

An appropriate transformation ownership allowance shall be applied, as approved by the OEB. Hydro One does not supply live bushing (station type) transformers for new Connections.

Existing Hydro One-owned station type transformers serving a Customer will be maintained to the end of their useful life. At the end of the useful life, the Customer will supply, install, own, and maintain the replacement unit.

**R. Transformation - Additional Station Transformers**

In the event that additional transformation is required due to load growth, and Hydro One owns the original transformer, Customers have two options:

- (i) purchase Hydro One's transformer and switchgear and add additional transformation; or
- (ii) if mutually agreeable, pay Hydro One the actual costs of installing the additional transformation, in which case Hydro One would continue to own, maintain, and replace the transformer as needed.

The Customer will supply all other associated material and perform any other work required to accommodate the additional transformation, at its own expense.

## **S. Winter Weather**

Winter weather increases the difficulty of underground installations. In addition to the “Hydro One Trenching Guidelines” pamphlet, which illustrates the correct method for installation of underground cable, following are further considerations with respect to winter installations.

Equipment operates differently at extreme cold temperatures. Often winter weather prohibits the installation of underground cable. It is at the discretion of Hydro One’s Lines Management whether or not installation will occur. Customers will be informed well in advance whether installation will occur so other arrangements can be made, if necessary. There is always a risk in winter that the work cannot be commenced or completed within a specified time frame.

When specialized equipment is required to make a winter connection, any incremental costs will be the responsibility of the Customer.

## **Types of Connections**

The two types of Connections to the Distribution System are:

- (i) Basic Connection; and
- (ii) an Expansion.

### **2.1.1. Basic Connection (Building that Lies Along)**

Where a Customer makes a written request to Hydro One to connect a Building that Lies Along Hydro One’s Distribution System, Hydro One shall provide a Connection. Hydro One provides a Basic Connection at no charge for all Customers, excluding those who want to connect an Embedded Generation Facility. The Basic Connection consists of:

- (i) supply and installation of standard overhead transformation, according to the Customer’s rate class, which includes secondary bus extensions or installations complete with conductor and anchoring;
- (ii) supply and installation of standard metering;
- (iii) an estimate and layout for the new service;
- (iv) connection of the Secondary or Primary Service at the described Ownership Demarcation Point and the Operational Demarcation Point; and
- (v) for year-round residential and seasonal residential classes only, the supply and installation of up to 30 metres overhead secondary conductor for up to a 200 amp service, or an equivalent credit

toward underground conductor. Year-round residential and seasonal residential Customers with Primary Services will be credited for the 30 meters of secondary wire.

A Basic Connection does not include the following additional costs, for which the Customer shall pay Hydro One:

- (a) for year-round residential and seasonal residential Customer classes – the cost difference between overhead and underground secondary wire;
- (b) incremental costs associated with the supply and installation of underground transformation;
- (c) the supply and installation of poles, anchors, all secondary conductor over 30 metres, hardware, and structures, as required on Customer's property; and
- (d) the costs of all changes required to the Distribution System exclusive of the secondary bus installation. These costs include pole changes, anchoring or hardware changes.

Where applicable and at their own expense, Customers will also be responsible for:

- (a) the supply of tree and vegetation management on the Customer's property;
- (b) any easements or property agreements as required by Hydro One;
- (c) the cost of any fees, permits, or other permissions required to connect the service; and
- (d) the amount payable by the Customer to Hydro One if the Customer is being added to a Single or Three Phase line constructed on or after January 1, 1993.

The terms above may also apply to a Customer requiring an increase to its existing service capacity which does not trigger changes to the main Distribution System serving that Customer.

Should Hydro One determine that this Basic Connection has been utilized to connect an Embedded Generation Facility within five years of the date of the original Basic Connection, Hydro One will invoice the customer for the full connection costs incurred, in accordance with Section 3.5 of these Conditions of Service.

For Embedded Generation Facilities, see section 3.5 of these Conditions of Service.

## **2.1.2. Expansions / Offer to Connect**

Where a Customer makes a written request to Hydro One to connect a building or an Embedded Generation Facility that is in Hydro One's service territory, Hydro One shall make an "Offer to Connect". For an Expansion, Hydro One will perform an economic evaluation using a discounted cash flow model in compliance with Appendix B of the Distribution System Code to determine the Customer's share, if any, of the projected capital costs (equipment, labour, material) and ongoing maintenance costs of the Expansion facilities (the "Expansion Costs"). If the Present Value of the future revenue is not sufficient to recover the Expansion Costs, the Customer shall pay a capital contribution calculated in a manner consistent with the requirements of the Distribution System Code. The capital contribution that Hydro One may charge in respect of the Expansion to a Customer other than a Distributor, shall not exceed the Customer's share of the difference between the Present Value of the Expansion Costs and the Present Value of the projected revenue.

When performing the economic evaluation for a Customer other than a Generator or a Distributor, Hydro One will estimate the Customer's monthly consumption based on information provided by the Customer. Where available, Customer-supplied load forecasts acceptable to Hydro One will be used.

For Customers requesting a service capacity increase that requires an Expansion, Hydro One will perform an economic evaluation, using a discounted cash flow model in compliance with Appendix B of the Distribution System Code to determine the Customer's capital contribution.

Where an Expansion is required to connect a Renewable Energy Generation Facility, Hydro One shall comply with Section 3.2.5A and 3.2.5B of the DSC.

### **A. Revenue Horizon**

Hydro One uses a revenue horizon of up to twenty-five (25) years to project expected forecasted revenues based on the forecasted load from the Expansion. The load forecast and the revenue horizon used for the economic evaluation are in the sole discretion of Hydro One.

### **B. Capital Cost Recovery Agreement/Connection Cost Agreement**

For an Expansion where Hydro One is making an investment of \$75,000.00 or more in the Distribution System, the Customer may be required to execute a Capital Cost Recovery Agreement, which may include a revenue guarantee or a requirement that the Customer provide an Expansion Deposit. Key provisions of this agreement are described in Appendix "A" to these Conditions of Service.



Where an Expansion is required in order to connect an Embedded Generation Facility other than a Micro-embedded Generation Facility, the terms associated with the Expansion will be included in the Connection Cost Agreement. Key provisions of this agreement are described in Appendix “A” to these Conditions of Service.

### **C. Staking and Engineering Fees**

Hydro One will provide staking and design at the Customer’s expense. This payment will be recognized in the discounted cash flow calculation.

### **D. Offer to Connect**

Hydro One will respond to requests for Connection within the following timeframes:

- (i) from Customers, excluding Embedded Distributors and Embedded Generators, by no later than 15 calendar days after receipt of the request. At this time, Hydro One will specify any information that must be provided and any obligations that must be met, by the Customer in order for Hydro One to process the request. An offer to connect will be made by no later than 60 calendar days following Hydro One’s receipt of all necessary information and the Customer’s meeting of all its obligations.
- (ii) from Embedded Distributors, by no later than 30 calendar days after receipt of a request. At this time, Hydro One will specify any information that must be provided and any obligations that must be met, by the Customer in order for Hydro One to process the request. An offer to connect will be made by no later than 90 calendar days following Hydro One’s receipt of all necessary information and the Customer meeting all of its obligations.
- (iii) from Customers wishing to connect an Embedded Generation Facility, within the timeframes set out in the Distribution System Code.

Hydro One’s initial “offer to connect” will include, at no cost to the Customer:

- (a) a statement as to whether the offer is a firm offer or is an estimate of the costs that would be revised in the future to reflect actual costs incurred;
- (b) a reference to these Conditions of Service and information on how the Customer requesting Connection may obtain a copy of them;
- (c) a statement as to whether a capital contribution will be required from a Customer;
- (d) a statement as to whether Hydro One will require an Expansion deposit from the Customer, and the amount of the Expansion deposit that the Customer will have to provide;

- (e) a description of the Connection charges that would apply and a statement whether they will be charged separately from the capital contribution, and, if known, the amount of those connection charges;
- (f) the amounts to be paid by the Customer to Hydro One if the Customer is being added to a Single or Three Phase line constructed on or after January 1, 1993; and
- (g) any additional information pertinent to the offer.

If Hydro One will require a Customer to pay a capital contribution, Hydro One will, in addition to complying with the above, also include in its initial offer, at no cost to the Customer:

- (a) the amount of the capital contribution that the Customer will have to pay for the Expansion;
- (b) the calculation used to determine the amount of the capital contribution to be paid by the Customer, including all of the assumptions and inputs used to produce the economic evaluation as described in these Conditions of Service;
- (c) a statement as to whether the offer includes work for which the Customer may obtain an alternative bid and, if so, the process by which the Customer may obtain the alternative bid;
- (d) a description of, and costs for, the contestable work and the non-contestable work associated with the Expansion, broken down into the following categories:
  - (i) labour (including design, engineering and construction);
  - (ii) materials;
  - (iii) equipment; and
  - (iv) overhead (including administration);
- (e) an amount for any additional costs that will occur as a result of the alternative bid option being chosen (including, but not limited to, inspection costs);
- (f) if the offer is for a residential Customer, a description of, and the amount for, the cost of the basic connection that has been factored into the economic evaluation; and
- (g) if the offer is for a non-residential Customer and if Hydro One has chosen to recover the non-residential basic connection charge as part of its revenue requirement, a description of, and the amount for, the connection charges that have been factored into the economic evaluation.

## **E. Alternative Bids**

*Customers may seek alternative bids for the contestable portion of the Expansion from Qualified Contractors where the Expansion requires a capital contribution to be made by the Customer.*

Information on electrical contractors is available from the following sources:

Yellow Pages under Electric Contractors  
[www.ECAO.org](http://www.ECAO.org) , Find Contractor  
[www.yellowpages.ca](http://www.yellowpages.ca) under Electric Contractors

### **E.1 Non contestable work excluded from alternative bids include:**

- (i) the preliminary planning, design and engineering specifications of the work required for the Distribution System expansion and connection; and
- (ii) the construction work on existing Hydro One Facilities and Equipment.

### **E.2 The Customer shall be responsible for:**

- (i) selecting, hiring, and paying the Qualified Contractor the costs for the work eligible for the alternative bid;
- (ii) assuming full responsibility for the construction of that aspect of the Expansion;
- (iii) administering the contract or paying Hydro One to perform this service, on an Actual Cost basis. Administering the contract includes acquisition of all required permissions, permits, and property rights as required;
- (iv) constructing the Expansion (line extension) to meet Hydro One's design requirements;
- (v) paying an inspection fee to Hydro One for inspection of the construction;
- (vi) paying the cost of any easements or property agreements as required by Hydro One;
- (vii) transferring ownership of the facilities built on public property or servicing more than one Customer to Hydro One for a nominal fee prior to connection;
- (viii) paying the Actual Cost of any additional design and engineering; and
- (ix) paying all applicable Electrical Safety Authority inspection fees.

### **E.3 Hydro One shall be responsible for:**

- (i) providing the design specifications for the construction; and
- (ii) inspecting and authorizing the line for Connection.

#### **E.4 Private Ownership of Alternative Bid Construction**

As a condition of Connection, the following apply to guide ownership of assets.

##### **E.4.1 Lines on Road Allowance**

Hydro One will assume ownership of Distribution lines constructed on the road allowance, including those constructed for Embedded Generation Facilities except where Hydro One determines that it foresees no future use for these assets. This provides Hydro One with better planning and control of its Distribution System in its service territory, may provide opportunities to connect other Customers without unnecessary duplication of infrastructure, and enhances safety and reliability.

Lines constructed on road allowance where Hydro One has no distribution assets may be owned by the customer only if Hydro One determines that it has no foreseeable use for such assets and Hydro One agrees in writing to customer ownership.

Lines constructed, in whole or in part, on road allowance and which are to be transferred to Hydro One must be constructed to Hydro One's design standards and approved route. The customer must provide any required easements and cutting rights if the customer is the owner of some of the lands; and where third parties own some of the lands, the customer must obtain easements and cutting rights on Hydro One's behalf prior to transfer.

The provision in the three preceding paragraphs do not apply to "joint use" arrangements with other utilities (including distributors, telephone companies, and cable providers) or Generators where a contractual arrangement is in place between Hydro One and such utilities or Generators to allow them to make attachments and enjoy occupancy on Hydro One assets.

##### **E.4.2 Lines on Private Property**

Normally, line constructed on private property shall be owned and maintained by the Customer. However, a line that has been constructed to Hydro One's design standards shall be transferred to Hydro One, at the discretion of Hydro One, with any required easements and cutting rights, where such line supplies more than one Customer or where there is a physical indication of a possible new connection. The Customer shall provide an access road when requested by Hydro One.

When a Customer separates part of its service such as through a land separation or sale of a business, there are three options for the supply to the new customer as follows:

- (i) the line must be brought up to Hydro One's design standards, and ownership is transferred to Hydro One along with any required easements and cutting rights;
- (ii) the Customers agree on a shared supply arrangement between themselves; or
- (iii) a new line is constructed, at the Customer's cost, to supply the new Customer.

In situations where another Customer requests connection to a Customer-owned line and the owner agrees to transfer ownership of the line to Hydro One, the new Customer will be responsible for the costs to bring the line up to Hydro One's design standards and the costs of any easements and cutting rights required by Hydro One.

#### **E.4.3 Lines on Crown Land**

Lines on Crown Land shall be treated similarly to lines on Private Property.

#### **E.4.4 Lines on Unopened Road Allowance**

Lines on unopened road allowance shall be treated in a similar manner as lines on Private Property. In cases where an unopened road separates two opened roads, Hydro One may agree to take over the ownership of the new distribution line if the line is constructed to Hydro One design standards and any easements and cutting rights needed for Hydro One to maintain the line are provided to Hydro One.

#### **E.4.5 Other Restrictions**

Lines which are to be transferred to Hydro One must be constructed to Hydro One's design standards and Hydro One must agree with the route selection taking into consideration factors such as operation and maintenance, reliability and restoration times.

In order for Hydro One to properly operate and maintain the circuits, the height of the poles must be within Hydro One's normal distribution lines standards. Therefore, poles heights shall be limited to a maximum of 5 x 3 phase power circuits with proper separation space as per standards and a two (2) foot space for a communication circuit.

#### **E.4.6 Submarine Cable**

Submarine cable supplying a single Customer may be owned and maintained by the Customer. Submarine cable that has been constructed to Hydro One's design standards and that has the appropriate crossing approvals shall be transferred to Hydro One, at the discretion of Hydro One, with any required easements, where such cable supplies more than

one Customer or where there is a physical indication or a reasonable expectation of a possible new connection

**F. Rebates for Customers Who Paid a Capital Contribution - Expansions**

If a Customer is added, after November, 2000, and within five years of the original in service date of the Expansion facilities (the “Connection Horizon”), to an Expansion that was constructed and paid for by another Customer(s), subject to Section 3.2.27A of the Distribution System Code, Hydro One shall calculate the rebate amount payable to the initial contributor(s) in accordance with the requirements of the Distribution System Code, considering factors such as the relative load level and the relative line length. Hydro One shall collect the rebate amount from the unforecasted customers and shall pay the said amount to the initial contributors.

Before Hydro One makes the Connection and subject to Section 3.2.27A of the Distribution System Code (where the new customer is a Renewable Energy Generation Facility), the new Customer will contribute its fair share of the original Expansion costs for the shared portion of the line; and the original contributor (unless Sections 3.2.5A or 3.2.5B of the Distribution System Code applies) or present property owner, as the case may be, will be entitled to the rebate, without interest, based on the apportioned benefit for the remaining period. No rebates will occur after the Connection Horizon has expired.

**G. Rebates for Refund Administration Service**

Rebates will normally be made to the present property owners unless a Refund Administration Service agreement is in place.

**G.1. Single and Three Phase Lines constructed from January 1, 1993, to October 31, 2000**

If a Customer is added to a Single or Three Phase line constructed during the period January 1, 1993 to October 31, 2000, and there is a Refund Administration Service agreement in effect for that line, Hydro One will rebate an amount equal to the new Customer’s fair share of the original cost of the shared portion of the line. The original capital contribution is not depreciated.

**G.2. Single and Three Phase Lines constructed prior to January 1, 1993 - Capital contribution collected or recorded was \$20,000 or more**

If a Customer is added to a Single or Three Phase line constructed prior to January 1, 1993, and the original contribution collected or recorded is \$20,000 or more, Hydro One will rebate in accordance with the agreement with the original contributor(s), but will not collect from the new Customer an amount equal to the new Customer’s fair share of the original cost of the shared portion of the line. The capital contribution is

depreciated at 3 per cent per year in service. Prepaid maintenance charges are not depreciated. At the end of the 15th year of the line Connection date, Hydro One will refund all remaining capital and prepaid maintenance.

### **2.1.3. Connection Denial**

Hydro One may deny Connection to any Customer for any of the following reasons:

- (i) refusal by the Customer to sign and deliver any agreements required to be executed by the Customer under these Conditions of Service;
- (ii) the Connection will represent a contravention of the laws of Canada or Ontario;
- (iii) the Connection will cause Hydro One to be in violation of the conditions in the Licence;
- (iv) the Connection will have an adverse effect on the reliability or the safety of the Distribution System;
- (v) the Connection will cause a material decrease in the efficiency of the Distribution System;
- (vi) the Connection will have a material adverse effect on the quality of the Distribution service received by an existing Customer, which effect could include voltage flicker, harmonics and power outages;
- (vii) the Connection will result in the discriminatory access to Distribution Services by other Customers;
- (viii) the person requesting the Connection owes Hydro One money, including money owed under any judgment, writ or other judicial order;
- (ix) the Customer refuses or is unable to provide current and valid identification or references, if requested;
- (x) the Connection is not in compliance with these Conditions of Service;
- (xi) the Connection does not meet Hydro One's design requirements;
- (xii) the Connection will impose an unsafe situation to workers or the public beyond the normal risks inherent in the operation of the Distribution System;
- (xiii) the Connection will result in the inability of Hydro One to perform planned inspections or maintenance;
- (xiv) by order of the Electrical Safety Authority;
- (xv) the Customer does not have the requisite approval(s) of the Electrical Safety Authority for the Connection; or
- (xvi) the premises being connected are the subject of a stop work order under the Building Code Act (Ontario).

Hydro One shall notify the Customer of the Connection denial with reasons in writing. Remedies will be suggested to the Customer where Hydro One is able to

do so. If it is not possible for Hydro One to resolve the issue, it is the responsibility of the Customer to do so before a Connection will be made.

#### **2.1.4. Inspections Before Connections**

All Customer electrical installations shall be inspected and approved by the Electrical Safety Authority before Connection to the Distribution System. Hydro One requires notification from the Electrical Safety Authority of this approval prior to Connection of a Customer.

Where Hydro One has required the Customer to perform specified work associated with the installation of connection assets on the Customer's premises, the Customer shall obtain acceptance by Hydro One of said work as a prerequisite to Connection to the Distribution System.

Before connecting to Hydro One's Distribution System, Hydro One will exercise its obligation to inspect all electrical connections and provisions for metering to ensure that they satisfy all technical requirements, unless a protective device that has been accepted by Hydro One separates the Connection.

Hydro One may at any time re-inspect any electrical connection or meter installation notwithstanding any previous inspection and acceptance of the installation.

Inspection requirements also apply to reconnections noted in Section 2.2.D.

#### **2.1.5. Relocation of Hydro One Facilities and Equipment**

A Customer requesting a relocation of all or any part of Hydro One Facilities and Equipment shall pay Hydro One all associated costs incurred by Hydro One in relocating the Hydro One Facilities and Equipment. Where there is applicable legislation or an agreement made with Ontario Hydro prior to April 1, 1999, the cost of such relocation will be as per the legislation or agreement.

If the relocation is from public to Private Property, Hydro One shall acquire easement rights at the expense of the Customer. This would include the actual cost to carry out the work and any costs resulting from having to obtain the new easement or authorization equivalent.

#### **2.1.6. Easements**

##### **A. Unregistered Rights**

Section 46 of the *Electricity Act* provides that all property that is subject to unregistered rights prior to April 1, 1999, will continue to be subject to the right until the right expires or until it is released by the holder of the right.



## **B. Registered Easements and Owner Agreement**

For new or modified Connections, Hydro One shall have the right to require a Customer to provide Hydro One with a registered easement or an owner agreement with respect to Hydro One Facilities and Equipment located on the property of the Customer or the property of a third party and/or where Hydro One deems it necessary.

Hydro One requires registered easements for facilities under any of the following conditions:

- (i) any single or multi-phase line, underground or submarine cables, poles, anchors, or aerial occupation where the line crosses Private Property, including any common service taps;
- (ii) anchors on Private Property supporting 44 kV lines, 27.6 kV lines, Three Phase feeders, and any single or multi-phase structures supporting reclosers, voltage regulators or capacitor banks where the poles are located on road allowance; and
- (iii) any new facilities and equipment being added to Hydro One Facilities and Equipment which are the subject of an existing unregistered easement that does not include replacement or maintenance of the existing Hydro One Facilities and Equipment.

Owner agreements are required for Hydro One Facilities and Equipment where Hydro One does not require registered easements.

### **2.1.7. Contracts**

#### **A. Opening and Closing of Accounts**

A property owner or occupant requesting to open an account agrees to be a Hydro One Customer and assume responsibility for Distribution Service charges provide to a service address, and shall do so by completing an account set up by phone or in writing. This will establish a contract with Hydro One and Customer accepts responsibility for charges related to the account.

Hydro One may require a security deposit as outlined in Section 2.4.3.A. Connection charges may also be payable by the Customer at the time of account set up or at a later date. In the case where the Customer is a Corporation or Limited Partnership, an authorised signing officer of the Corporation will be required to bind the agreement. A Solicitor or person with Power of Attorney can agree on behalf of the Customer to the opening of an account.

Customers requesting to close an account are required to provide five business days notice to allow time to read the meter at the service address and issue a final bill. If a Customer requests to cancel a service agreement and no longer request electricity to be provided to the service address, Hydro One may remove certain

delivery equipment, such as power lines, transformers and meters. If a request is made for reconnection, the new Customer setting up an account at the service address will incur the applicable costs to reinstall appropriate delivery equipment. If service has been disconnected from a premise for six months or longer, an ESA inspection is required.

In all cases, Hydro One will not maintain availability of a meter and service without an active account and Customer. When a Customer advises Hydro One they are no longer responsible for the account or requests to close an account, a final bill will be issued for the account. If, at that time, a new Customer has not assumed responsibility for services provided to the property, Hydro One may Disconnect the property and may remove the Hydro One Facilities and Equipment from the property.

For account management purposes, including but not limited to billing, collections and communications with customers, Hydro One may consolidate the accounts of customers with multiple services, including services at multiple locations or premises, and treat these as a single account.

## **B. Implied Contracts**

(i) Effective April 1, 2011, where an account set up has been completed by a Customer over the phone or in writing, an implied contract is in place with any such Customer that is connected to the Distribution System and receives Distribution Services from Hydro One. The terms of the implied contract are embedded in these Conditions of Service, the Electricity Distribution Rate Handbook, Hydro One's Rate schedules, the Licence, the Distribution System Code, the Standard Supply Service Code and the Retail Settlement Code, all as amended from time to time.

Any person(s) who take or use electricity delivered and/or supplied by Hydro One by way of an implied contract shall be liable for payment for such electricity. Any implied contract for the supply of electricity by Hydro One shall be binding upon the heirs, administrators, executors, successors and assigns of the person(s) who took and/or used the electricity supplied by Hydro One.

(ii) This subparagraph shall apply to Customers who were:

- (a) connected to the Distribution System and received Distribution Services from Hydro One prior to April 1, 2011; or
- (b) connected to the Distribution System and received Distribution Services from Hydro One prior to April 1, 2011 and continues to be connected to the Distribution System and receive Distribution Services from Hydro One as of April 1, 2011.

Notwithstanding the absence of a written contract, Hydro One has an implied contract with any Customer that is connected to the Distribution System and

receives Distribution Services from Hydro One. The terms of the implied contract are embedded in these Conditions of Service, the Distribution System Code, the Standard Supply Service Code, the Retail Settlement Code, all as amended from time to time.

Any person(s) who take or use electricity delivered and/or supplied by Hydro One shall be liable for payment for such electricity. Any implied contract for the supply of electricity by Hydro One shall be binding upon the heirs, administrators, executors, successors and assigns of the person(s) who took and/or used the electricity supplied by Hydro One.

In the absence of a contract for electricity with a tenant, or in the event the electricity was used, prior to April 1, 2011, by a person (s) unknown to Hydro One, the cost for electricity consumed by such person(s) is due and payable by the owner(s) of such property. In the event the cost of electricity consumed prior to April 1, 2011 was due and payable by the owner(s) of a property pursuant to this subparagraph, the cost of electricity consumed after April 1, 2011 will continue to be due and payable by the owner(s) until:

- (a) a Customer contacts Hydro One to set up an account and agrees to assume responsibility for services provide to such property; or
- (b) the owner(s) advises Hydro One that they are no longer responsible for the account.

### **C. Landlord and Tenant Agreements**

When a tenant has opened an account at a property for the distribution of services they have agreed to be a Hydro One Customer and have accepted responsibility for electricity charges provided to a service address. Therefore, the contract is with that tenant. When a tenant closes the account, Hydro One will adhere to the date provided by the tenant, regardless of the terms of any lease or verbal agreement between that tenant and the landlord or owner, and a final bill will be issued for the account.

A landlord or owner may enter into an agreement with Hydro One to accept responsibility for any and/or all units listed at a service address for which they are the landlord or owner and be responsible for any electricity charges for services provided at that property at any time a person has not assumed responsibility for services delivered to the property until:

- (i) new tenant opens an account and agrees to accept responsibility for the charges at the service address, or;
- (ii) the landlord/owner terminates the agreement..

A landlord or owner may enter into the above mentioned agreement via the phone or a written agreement. If a new account is set up in landlord/owner's name pursuant to such an agreement, the following terms and conditions apply:

- (i) Hydro One will open an account(s) for electrical service to the properties in the landlord/owner's name as soon as any vacating tenant's account has been closed, where;
- (ii) the landlord/owner will be responsible for the new account(s) and any electricity charges for service provided, at any and all units listed at a service address, and will comply with these Conditions of Service; and
- (iii) a new account set up charge will apply to the new account(s), which will appear on the first electricity bill for any new account(s). Even though the property may be vacant, monthly service charges and electricity used will be billed to this new account(s).

The above agreement will be in place unless Hydro One is advised otherwise either verbally or in writing. For greater clarity, if a tenant has closed an account and a new tenant or landlord or owner had not assumed responsibility for services delivered to the property, Hydro One may Disconnect and remove the Hydro One Facilities and Equipment from the property in accordance with Section 2.1.7 A.

It is the responsibility of the landlord to ensure Hydro One is aware of any changes in contact, mailing and/or billing information. Where landlord information is not known, the above will not apply and Hydro One will disconnect service without an active account.

#### **D. Customer Service Contract**

All Customers wishing to connect to the Distribution System, other than a Customer proposing to expand or develop an industrial/commercial or residential subdivision or to develop a condominium or a Generator who has signed a Connection Cost Agreement, must sign a Customer Service Contract as described in Appendix "A" to these Conditions of Service.

#### **E. Capital Cost Recovery Agreement**

Where Hydro One is entitled under these Conditions of Service to recover all or a portion of the costs of a Connection and/or requires that a Customer provide a revenue guarantee, the Customer must execute a Capital Cost Recovery Agreement ("CCRA"). The CCRA shall be executed before Hydro One commences any construction activities in respect of the Connection. The CCRA will describe the work to be performed by Hydro One in respect of the Connection and any other conditions set forth in Hydro One's offer to connect, together with the applicable payment terms (including revenue guarantees and/or capital contribution where applicable). Key provisions of the CCRA are described in Appendix "A" to these Conditions of Service.

In estimating the average energy and demand per added customer (by project), Hydro One reserves the right to, in consultation with the Customer, adjust the revenue

forecast to reflect applicable current experience and information for the customer class and type. A 10 year period will be used as the guaranteed incremental revenue period for all Customers except Generators.

## **F. Subdivision and Condominium Connections**

A Customer proposing to expand or develop an industrial/commercial or residential subdivision or to develop a condominium shall be required to execute a Subdivision Agreement/Multi-Service Connection Cost Agreement. Key provisions of this agreement are described in Appendix “A” to these Conditions of Service.

Consistent with the Distribution System Code, Hydro One may, at Hydro One’s sole discretion, require the developer to provide an expansion deposit for up to 100% of the present value of the forecasted revenues, or for up to 100% of the present value of the projected capital costs and on-going maintenance costs of the expansion project. The deposit is intended to cover the risk that the projected revenue for the expansion will not materialize as forecasted, and the risks associated with the construction and operation of the expansion facilities. The deposit will be refunded as stipulated by the Distribution System Code.

## **G. Connection Cost Agreement (formerly known as a Connection and Cost Recovery Agreement)**

All Generators who wish to connect a Small Embedded Generation Facility, a Mid-sized Embedded Generation Facility or a Large Embedded Generation Facility to the Distribution System are required to enter into a Connection Cost Agreement with Hydro One. Key provisions of this agreement are described in Appendix “A” to these Conditions of Service.

## **H. Connection Agreements**

### **H.1. Sub-transmission Customer (including Embedded Distributors)**

Hydro One shall have the right to require any Sub-transmission Customer, including an Embedded Distributor, to execute a Connection Agreement. Key provisions of Hydro One’s form of Connection Agreement are described in Appendix “A” to these Conditions of Service.

### **H.2. Embedded Generation Facilities**

Hydro One requires all Customers with Generation Facilities connected to the Distribution System and all Embedded Generators wishing to connect to the Distribution System to execute a Connection Agreement in the applicable form prescribed in Appendix “E” of the *Distribution System Code* and/or such other agreements as may be reasonably required by Hydro One in the circumstances as described in Appendix “E” of the

*Distribution System Code* as “Other Potential Contracts”. The Connection Agreement with an Embedded Generator who is not a Wholesale Market Participant will also contain the terms under which Hydro One purchases power from that Embedded Generator.

### **H.3. Timing of Execution**

Hydro One, in its sole discretion, shall have the right to require Customers to execute a Connection Agreement prior to, on or after Connection.

### **I. Access Agreements**

Customers requiring ongoing access to Hydro One Facilities and Equipment, to operate or maintain Distribution equipment including wholesale revenue metering, must enter into an Access Agreement. Key provisions of an Access Agreement are described in Appendix “A” to these Conditions of Service.

### **J. Special Contracts**

Special contracts that are customized in accordance with the service requested by the Customer normally include the following examples:

- (i) construction sites;
- (ii) mobile facilities;
- (iii) non-permanent structures;
- (iv) special occasions, etc.; and
- (v) house moves.

### **2.1.8. Bypass of Distribution Facilities**

In the event that an existing Customer elects to transfer all or a portion of its existing load at a Hydro One-owned distribution facility to the Customer’s own facility or to the facility of another person (including a Transmitter), such transfer is considered to be “bypass”. To protect other ratepayers, Hydro One may, at Hydro One’s sole discretion, require the Customer to compensate Hydro One for such bypass. Hydro One will calculate the bypass compensation amount based on the net book value of the bypassed facility, including a salvage credit and reasonable removal and environmental remediation costs, if applicable, and by determining the bypassed capacity on the relevant facility in proportion to the total capacity of the bypassed facility. In the event that the above bypass of a distribution facility by the Customer also results in the bypass of a Transmitter-owned facility, Hydro One will require the Customer to also pay, as an “upstream cost”, an appropriate share of any bypass compensation payable to the Transmitter in relation to such bypass.

## 2.2. Disconnection/Load Control

Hydro One reserves the right to Disconnect or control the amount of electricity that a Customer can consume by installing a load control device for any of the following reasons:

- (i) failure to pay Hydro One any amounts due and payable for the Distribution of electricity or for supply of electricity under Section 29 of the Electricity Act;
- (ii) failure to pay Hydro One any amounts due and payable on a distributor-consolidated bill;
- (iii) failure to pay any Connection costs due and payable;
- (iv) failure to notify Hydro One of Customer responsibility for electricity account when a new party moves into an existing connected property and consumes electricity;
- (v) non-payment of security deposits identified as a condition of service or a condition of continuing service;
- (vi) contravention of the laws of Canada or Ontario;
- (vii) imposition of an unsafe worker situation beyond normal risks inherent in the operation of the Distribution System;
- (viii) adverse effect on the reliability and safety of the Distribution System;
- (ix) a material decrease in the efficiency of the Distribution System;
- (x) a material adverse effect on the quality of Distribution Services received by an existing Connection;
- (xi) inability of Hydro One to perform meter reading (manually, automatically or remotely), planned inspections, maintenance, repairs or replacement of all or any part of a Meter Installation;
- (xii) failure of the Customer to comply with a directive of Hydro One that Hydro One makes for the purposes of meeting its Licence obligations;
- (xiii) failure of the Customer to comply with any requirements in these Conditions of Service, including a requirement that the Customer complete an account set up process over the telephone or in writing and assume responsibility for Distribution Services charges, or a term of any agreement made between the Customer and Hydro One, including, but not limited to, a Connection Agreement, Connection Cost Agreement or a Connection and Cost Recovery Agreement;
- (xiv) failure of the Customer to enter into a Connection Agreement required by these Conditions of Service;
- (xv) in compliance with a court order;
- (xvi) by order of the Electrical Safety Authority;
- (xvii) by order of the IESO; or
- (xviii) for the reasons identified in Section 2.2.A of these Conditions of Service.

## **A. Disconnection/Load Control Process for Reasons of Non-payment**

If a bill remains unpaid in whole or in part nineteen (19) calendar days after the due date and at least:

- (i) sixty (60) calendar days after a written disconnection notice has been provided to the Customer by personal service, prepaid mail or by posting notice on the property in a conspicuous place, if the Customer is a residential Customer that has provided Hydro One with documentation from a physician confirming that disconnection poses a risk of significant adverse effects on the physical health of the Customer or on the physical health of the Customer's spouse, dependent family member or other person that regularly resides with the Customer; or
- (ii) in all other cases, ten (10) calendar days after a written disconnection notice has been provided to the Customer by personal service, prepaid mail or by posting notice on the property in a conspicuous place,

Hydro One may fully interrupt or control the distribution of electricity to the Customer.

In accordance with Section 4.2.1 of the Distribution System Code, Hydro One shall provide the Customer being disconnected for non-payment the Fire Safety Notice of the Office of the Fire Marshall and any other public safety notices or information bulletins issued by public safety authorities and provided to Hydro One, which provide information respecting dangers associated with the disconnection of electricity service.

A residential Customer may designate a third party to also receive a copy of the notices set out in this Section provided that the request is made no later than the last day of the applicable minimum notice period set out in this Section.

Hydro One shall suspend any disconnection action for 21 days from the date of notification by a registered charity, government agency or social service agency that it is assessing a residential Customer for the purposes of determining whether the Customer is eligible to receive bill payment assistance, provided such notification is made within 10 days from the date on which the disconnection notice is received by the Customer. Where the Customer has designated a third party to receive a copy of any disconnection notice, and such third party notifies Hydro One that he or she is attempting to arrange assistance with the bill payment, Hydro One shall suspend all disconnection action for 21 days provided such notification is made within 10 days from the date on which the disconnection notice is received by the Customer. Upon notification by a registered charity, government agency or social service agency that the residential Customer is not eligible to receive bill payment assistance, or if the third party decides not to



assist the Customer with the bill payment, Hydro One may proceed with the disconnection process.

In accordance with Section 4.2.2.5 of the Code, where the disconnection is in respect of a multi-unit, master-metered building, Hydro One shall post a copy of the disconnection notice in a conspicuous place on or in the building promptly after issuance of the notice.

Hydro One shall make reasonable efforts to contact the residential Customer at least 48 hours prior to the scheduled date of disconnection.

## **B. Restricted Access to Meter Located in Residential Property**

Pursuant to Section 40 of the Electricity Act, 1998 and Section 1.6 B of the Hydro One's Conditions of Service (available at [www.hydroone.com/cos](http://www.hydroone.com/cos)), Hydro One has a right to enter a Customer's property for the purposes of reading, inspecting, maintaining, repairing or replacing the meter. Furthermore, as per Section 2.2 of these Conditions of Service, Hydro One reserves the right to physically Disconnect or limit the amount of electricity that a Customer can consume for the following reason:

- (i) inability of Hydro One Networks to perform meter reading (manually, automatically or remotely), planned inspections, maintenance, repairs or replacement of all or any part of a Meter Installation.

If a residential customer wilfully or otherwise restricts access to a meter located within a residential Customer's property for the purposes of preventing Disconnection due to non-payment; Hydro One reserves the right to make an application to the court for an order to enter your property and request a court appointed sheriff to escort Hydro One employees to your property. If required, Hydro One will further request the assistance of a bailiff and locksmith. All costs expended by Hydro One for the purposes of entering your property in accordance with the Electricity Act, 1998 and these Conditions of Service, including court fees, sheriff's fees, and the costs of a bailiff and locksmith are the Customer's responsibility.

## **C. Disconnection Process for Reasons Other than Non-Payment**

Subject to Hydro One's rights in Section C below, Hydro One will provide notice of disconnection to the Customer for reasons other than non-payment by personal service, prepaid mail or by posting notice on the property in a conspicuous place. If the Customer does not remedy the situation that gave rise to Hydro One's right to disconnect the Customer from the Distribution System within the time period specified by Hydro One in the notice, Hydro One may disconnect the Customer from the Distribution System or interrupt the distribution of electricity to the Customer on or after the date specified in the notice.

#### **D. Immediate Disconnection without Notice**

Hydro One may immediately interrupt a Customer, without notice, in accordance with a court order, a request by a fire department or for emergency, public safety (including potential for loss of life or limb), system reliability reasons or in order to inspect, maintain, repair, alter, remove, replace or disconnect wires or other facilities used to distribute electricity or where there is an energy diversion, fraud or abuse on the part of the Customer.

#### **E. Liability for Disconnection**

Disconnection does not relieve the Customer of the liability for arrears or minimum bills for the balance of the term of the contract. The Customer shall be liable for any third party costs incurred by Hydro One which are necessary to effect a Disconnection including, but not limited to, court fees, bailiff and sheriff's fees, and the cost of having a locksmith attend the property. Such costs shall be included in the Customer's bill.

Under no circumstances will Hydro One be liable for any damage resulting from, associated with or related to the Disconnection or the control of distribution of electricity, including damage to the Customer or the Customer's premises and any business or other losses suffered by the Customer as a result of the disconnection.

#### **F. Reconnection**

Where the reason for the Disconnection has been remedied to Hydro One's satisfaction, Hydro One shall reconnect a Customer. All costs, including inspections, associated with the Disconnection and reconnection shall be paid for by the Customer prior to reconnection of the service.

Under any of the following circumstances, Hydro One requires that the Customer obtain the approval of the Electrical Safety Authority prior to Hydro One reconnecting the service:

- (i) where Hydro One has reason to believe that the wiring may have been damaged or altered;
- (ii) where service was disconnected for modification of Customer wiring;
- (iii) where service has been disconnected for a period of six months or longer;
- (iv) where the service was disconnected as a result of an adverse effect on the reliability and safety of the Distribution System; or
- (v) where it is a requirement of the Electrical Safety Code.

## **G. Disconnection and Reconnection Related Charges**

Unless specified elsewhere in these Conditions of Service, a charge shall apply in cases where it is necessary for Hydro One to make a trip to the Customer's premises to collect payment for an overdue account, disconnect service, install a Load Controller or reconnect service. The Customer will also be responsible for any incidental charges.

## **H. Unauthorized Energy Use**

Hydro One reserves the right to disconnect the Distribution of electricity to a Customer, without notice, for causes including energy diversion, fraud or abuse on the part of the Customer. Such service shall not be reconnected until the Customer rectifies the condition and pays all uncollected charges, including late payment charges as determined by Hydro One, and costs incurred by Hydro One arising from unauthorized energy use, including inspections and repair costs, and the cost of disconnection and reconnection.

## **I. Fraudulent Account Setup**

Hydro One reserves the right to Disconnect service and/or maintain service interruption if it has reasonable grounds to believe that the consumer(s) of electricity (whether the consumer is an occupant who owns or rents the property, where the property is used for either residential or commercial purposes) has wilfully and intentionally avoided bill payment of outstanding charges by applying or re-applying for a new Hydro One account under a different account holder name. Furthermore, as a condition of establishing a new account and electricity supply, Hydro One reserves the right pursuant to section 3.1.G of the Distribution System Code, and section 2.1.3.v111 of Hydro One's Conditions of Service, to validate the identity of a new account applicant by requesting official identification of the new account applicant; including but not limited to photo identification, a credit bureau report, property tax documentation, legal letter from solicitor affirming the identification of the new account applicant, and that the new account applicant is no way affiliated to any previous account holder who used electricity and stranded arrears.

## **J. Service Cancellation**

Where a Customer requests a service cancellation, Hydro One will remove certain delivery equipment, such as power lines, transformers and meter. If reconnection is requested, the Customer will incur a cost to reinstall appropriate delivery equipment and shall follow the steps and processes for new connections set out in these Conditions of Service.

## **2.3. Conveyance of Electricity**

### **2.3.1. Limitations on the Guarantee of Supply**

Hydro One will endeavour to use reasonable diligence in providing a regular and uninterrupted supply of electricity but does not guarantee a constant supply or the maintenance of unvaried voltage and will not be liable for damages to the Customer by reason of any failure in respect thereof.

Customers, including households, requiring a higher degree of security than that of normal supply are responsible to provide their own backup or standby facilities and/or pay all associated incremental costs to supplement power supply in the event of power outages. Customers may also require, at their premises, special protective equipment which is subject to the approval of Hydro One, to minimize the effect of momentary power interruptions.

Customers requiring a three-phase supply should install protective apparatus to avoid damage to their equipment, which may be caused by the interruption of one phase, or non-simultaneous switching of phases of Hydro One's supply. Damages resulting from the failure to install protective apparatus shall be at the Customer's expense.

During an emergency, Hydro One may interrupt supply of electricity to a Customer in response to a shortage of supply or to effect repairs on the Distribution System, or while repairs are being made to Customer-owned equipment. In addition to Hydro One's rights under Section 40 of the *Electricity Act*, Hydro One or its authorized agents may enter the Customer's property in accordance with Section 1.6.B of these Conditions of Service.

Where submarine cable is used to supply power to Customers, Hydro One may not be able to repair interrupted supply due to safety concerns related to seasonal weather conditions. In this case, Hydro One will notify affected Customers, and power will be restored as soon as conditions permit.

### **2.3.2. Power Quality**

#### **A. Standards and Guidelines for Power Quality**

Hydro One shall follow Good Utility Practice in terms of its guidelines and standards for power quality where applicable but does not guarantee an unvaried voltage or frequency.

#### **B. Voltage and Current Harmonics**

Large rectifiers, inverters, arc furnaces, static VAR systems and other non-linear loads generate harmonic voltages and currents. These harmonics may interfere with the operation of the Distribution System by conductive interference and/or may interfere with communication systems by inductive interference.

Hydro One will follow Good Utility Practice for establishing limits on harmonic current emissions and voltage distortions. The Customer shall ensure that the equipment at its facility does not generate harmonic currents that exceed acceptable industry practices.

**C. Voltage Fluctuations and Flicker**

Voltage flicker will be limited to:

| <b>Magnitude (%)</b> | <b>Limit</b>  |
|----------------------|---------------|
| 0.5                  | 3 per second  |
| 1.0                  | 20 per minute |
| 2.0                  | 45 per hour   |
| 3.0                  | 4 per day     |

A higher flicker may be acceptable for infrequent starts.

**D. Frequency Fluctuations**

In general, the frequency of AC power on the Distribution System is dictated by the supply frequency on the transmission system to which the Distribution System is connected.

**E. Over-voltages**

In general, Hydro One will follow Good Utility Practice to minimize the magnitude and extent of short-term over-voltages.

**Voltage Unbalance**

The Distribution System may be subject to small differences in voltages across the three phases of supply due to unbalanced customer loads or unbalanced loading of the distribution circuits by single-phase customer loads. Since an unbalanced voltage supply can be detrimental to some customer three-phase electrical equipment, Hydro One will endeavour to minimize voltage unbalance, and will apply the following guidelines when voltage unbalance is found to exist.

| <b>Measured Voltage Unbalance</b> | <b>Corrective Action to Be Taken</b>          |
|-----------------------------------|---|
| < 3 %                             | No Action                                     |
| 3 % - 5 %                         | Correct on a planned basis (within 12 months) |
| > 5 %                             | Correct on an emergency basis                 |

## F. Stray or Tingle Voltage

Varying amounts of low-level voltage often exist between the earth and electrically grounded farm equipment such as metal stabling, feeders, milk pipelines or even wet concrete floors. Usually, these voltage levels present no harm to animals. However, if an animal touches two pieces of equipment that are at different voltage levels, a small electric current passes through the animal. This is known as stray voltage. Stray voltage can be produced by a wide variety of off-farm and on-farm sources.

Using dairy cows as an example, reported symptoms include:

- Reluctance to enter milking parlour
- Reduced water or feed intake
- Nervous or aggressive behaviour
- Uneven and incomplete milkout
- Increased mastitis
- Lowered milk production
- Reduced growth

These same symptoms can also be the result of other non-electrical farm factors. For example, disease, poor nutrition, unsanitary conditions, or milking machine problems can produce some of the same symptoms in farm animals as stray voltage. Farmers should consider and investigate all possibilities, including stray voltage, when attempting to resolve these symptoms.

**Off-farm sources:** In a properly functioning electrical distribution system, some voltage will always exist between the neutral system (ground conductors) and the earth. The level of this NEV (neutral-to-earth voltage) can change on a daily or seasonal basis, depending on changes in electrical loading, environmental conditions and other factors. For safety reasons, Hydro One's neutral system is connected to a farm's grounding system. While this bond protects people and animals from shocks caused by faulty electrical equipment and lightning strikes, it also results in a stray voltage equal to a fraction of the NEV appearing on grounded farm equipment such as feeders, waterers, metal stabling, metal grates, milk pipelines and wet concrete floors.

**On-the-farm sources:** Poor or faulty farm wiring, improper grounding, unbalanced farm system loading, defective equipment or voltages from telephone lines or gas pipelines are all possible sources.

For additional information on the effects of stray voltage on livestock see the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) website, <http://www.omafra.gov.on.ca>.

If you think you have a stray voltage problem, call Hydro One at 1-888-664-9376 to set up an appointment for a visit from Hydro One staff, who will perform

appropriate measurements as required by section 4.7 of the Distribution System Code to help determine if stray voltage is present on your farm, perform the stray voltage test if required and take remedial action if needed.

### **G. Power Quality Inquiries**

Hydro One maintains a 24-hour call answer service (Section 1.5) for the purpose of receiving inquiries from Customers regarding power interruptions, power quality incidents, and incidents related to the integrity or safety of its Distribution System.

In response to a Customer's power quality concern, where the utilization of electric power affects the performance of electrical equipment, Hydro One will work with the Customer to perform investigative analysis to identify the underlying cause. Depending on the circumstances, this may include review of relevant power interruption data, trend analysis, and/or use of diagnostic measurement tools.

If, after an initial investigation, the power quality issue remains unresolved, and it is determined that further detailed engineering study is required, Hydro One shall advise the Customer of an intended course of action. Upon determination of the cause resulting in the power quality concern, where it is deemed a system delivery issue and where industry standards are not met, Hydro One will recommend and/or take appropriate mitigation measures. Hydro One will not be obligated to correct a problem if correcting the problem would adversely affect other Hydro One Customers. Hydro One will use appropriate industry standards and Good Utility Practice as a guideline.

If, through an initial assessment or subsequent detailed investigation, it is determined that the source of a power quality complaint is the Customer's own equipment, then Hydro One may require reimbursement from the Customer for all or a portion of the costs incurred in carrying out the investigation.

### **H. Outage Notification Process**

It is occasionally necessary to interrupt a Customer's supply to maintain or improve the Distribution System. For planned outages, Hydro One will endeavour to provide as much notice as possible, but at least two (2) business days' notice for minor interruptions and up to ten (10) business days' notice for larger interruptions. Hydro One will notify Customers by telephone, fax, mail or hand delivery. Additional notification through the media may also be provided.

In emergencies, Hydro One will not provide prior notification of an interruption.

### **2.3.3. Electrical Disturbances**

#### **Customer Responsibilities**

Customers shall ensure that their electrical equipment does not cause any unacceptable voltage fluctuations, voltage unbalance, harmonics, or other disturbances that could negatively affect other Customers connected to the Distribution System, or Hydro One Facilities and Equipment. Examples of equipment capable of causing disturbances are large motors, welders, and variable speed drives. In planning the installation of such equipment, the Customer must consult with Hydro One.

The Customer's equipment shall comply with the limitations for permissible distortion caused by harmonic currents and voltages described in CAN/CSA-C61000-3-6 from the Canadian Standards Association.

If it is determined that unacceptable conditions are being caused by any Customer Equipment, the Customer shall take appropriate remedial action to correct the condition. Depending on the severity of the electrical disturbance, Hydro One may require that such equipment be disconnected from the Distribution System, in accordance with Section 2.2, until corrective measures are taken.

The characteristics of specific electrical disturbances should be referred to Hydro One for evaluation and interpretation against the Hydro One standards and guidelines for power quality. (See Section 2.3.2A)

Customers who may require an uninterrupted source of electricity, or a supply completely free from fluctuations and disturbance, must provide their own power conditioning equipment for these purposes.

**Power Factor:** The Customer shall take and use power at all times in such manner that the ratio of the kilowatts to the kilovolt-amperes when measured simultaneously at the point of delivery for power is as near unity as practicable. When the IESO has issued directives that require adherence to a specific PF limit, such as .95 PF at a transformer station, then Hydro One may require a Customer to operate at or above the specified limit or be responsible for the costs that Hydro One incurs in meeting the required limit at the station.

**Phase Balancing:** The Customer shall take and use the power so that the current will be taken from the three phases equally as far as practicable. If at any time the unbalance in current is greater than 10% and in Hydro One's opinion excessive, the Customer agrees to make at its own expense, upon request, the changes necessary to reduce the unbalance to an acceptable value.

**Electrical Fluctuations and Interference:** The Customer shall operate in such a manner as not to cause disturbance, fluctuations or interference on Hydro One's distribution system or interference with communication systems or control circuits of Hydro One or of any other third party. The Customer shall take such



remedial measures at its sole expense by way of installing suitable apparatus or otherwise as may be necessary to reduce any disturbance or fluctuations or interference to a tolerable level. In any event, the Customer shall indemnify Hydro One from all claims and demands made against Hydro One by any third party in consequence of failure by the Customer to perform its obligations under this paragraph.

#### **2.3.4. Standard Voltage Offerings**

Hydro One will supply a single stage of transformation to the Customer's utilization voltage at standard voltages only. These voltages will conform to Canadian Standards Association ("CSA") standards. The Customer will supply any additional transformation required below the utilization voltage if required. Where the Customer requires a secondary voltage other than those noted below, the Customer shall supply the transformers and associated equipment.

##### **A. Standard Secondary Voltages**

Single Phase – 120/240 volts 3 wire;

Three Phase – 120/208 volts 4 wire; and

Three Phase - 347/600 volts 4 wire.

##### **B. Standard Primary Voltages**

Hydro One has a variety of primary distribution voltages across the province, but in general has only one primary voltage in each vicinity. Hydro One shall provide only the nominal primary voltage present in the vicinity to service a Connection or development, unless the development cannot be effectively fed from the existing supply. Customers requesting a Primary Service should contact Hydro One to determine the primary voltage available at their location.

##### **Typical Primary Voltages**

44,000 Volts – 3 Phase 3 Wire;  
16,000/27,600 Volts – 3 Phase 4 Wire;  
14,400/25,000 Volts – 3 Phase 4 Wire;  
8,000/13,800 Volts – 3 Phase 4 Wire;  
7,200/12,470 Volts – 3 Phase 4 Wire;  
4,800/8,320 Volts – 3 Phase 4 Wire; or  
2,400/4,160 Volts – 3 Phase 4 Wire

##### **Voltage Conversions**

When Hydro One undertakes a voltage conversion to accommodate normal load growth the following shall apply:

- (i) Hydro One shall pay all labour costs associated with upgrading private service lines not to exceed Hydro One estimated labour costs, plus equipment costs such as insulators, cross arms, cutouts, arresters and transformers and underground cables when required.
- (ii) Where it is necessary to replace poles and/or conductor due to end of life condition, the Customer shall be responsible for the cost of the material.
- (iii) Hydro One shall pay to convert obsolete delta services to wye-grounded.
- (iv) In some cases a more cost effective solution may be the installation of a step up/down voltage transformation device.
- (v) Hydro One shall pay for the cost of the electrical inspection.

**2.3.5. Voltage Guidelines**

Standard operating conditions are:

| <b>CSA Standard CAN3-235-83 Table 3</b> |  |                             |         |                              |
|---|--|-----------------------------|---------|------------------------------|
| Nominal System Voltages                 | Recommended Voltage Variation Limits for Circuits up to 1000 volts, at the Service Entrance. |                             |         |                              |
|   | Extreme Operating Conditions   | Normal Operating Conditions |         | Extreme Operating Conditions |
| Single Phase                            |  |                             |         |                              |
| 120/240                                 | 106/212  | 110/220                     | 125/250 | 127/254                      |
| 240                                     | 212  | 220                         | 250     | 254                          |
| 480                                     | 424  | 440                         | 500     | 508                          |
| 600                                     | 530  | 550                         | 625     | 635                          |
| Three Phase<br>4 -Wire                  |  |                             |         |                              |
| 120/208Y                                | 110/190  | 112/194                     | 125/216 | 127/220                      |
| 240/416Y                                | 220/380  | 224/388                     | 250/432 | 254/440                      |
| 277/480Y                                | 245/424  | 254/440                     | 288/500 | 293/508                      |
| 346/600Y                                | 306/530  | 318/550                     | 360/625 | 367/635                      |
| Three Phase<br>3 – Wire                 |  |                             |         |                              |
| 240                                     | 212  | 220                         | 250     | 254                          |
| 480                                     | 424  | 440                         | 500     | 508                          |
| 600                                     | 530  | 550                         | 625     | 635                          |

These voltage guidelines relate to long-term steady-state levels and do not include short term or transient disturbances.

For system voltages greater than 1,000 V and up to 50,000 V, the maximum voltage variation is  $\pm 6\%$  of the nominal voltage. Under emergency conditions voltages may drop below these thresholds.

Where voltages lie outside the indicated limits for Normal Operating Conditions but within the indicated limits for Extreme Operating Conditions, improvement or corrective action will be taken on a planned and programmed basis, but not necessarily on an emergency basis.

Where voltages lie outside the indicated limits for Extreme Operating Conditions, improvement or corrective action will be taken on an emergency basis. The urgency for such action will depend on many factors such as the location and nature of load or circuit involved, and the extent to which limits are exceeded with respect to voltage levels and duration, etc.

Hydro One practises reasonable diligence in maintaining supply voltage levels but is not responsible for variations in voltage from external forces such as operating contingencies, exceptionally high loads and low voltage supply from the transmitter.

### **2.3.6. Emergency Backup Generation Facilities, Load Displacement Generation Facilities and Energy Storage**

#### **A. Emergency Backup Generation and/or Energy Storage Facilities**

Customers with an Emergency Backup Generation and/or Energy Storage Facility, whether they are portable or permanently affixed, shall comply with the requirements of the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically, if any, and all of the applicable criteria of the Electrical Safety Code. Furthermore, the Customer is responsible for complying with all Applicable Laws in respect of the Emergency Backup Generation and/or Energy Storage Facility, including, all applicable environmental requirements.

All Emergency Backup Generation and/or Energy Storage Facilities must be operated in isolation from the Distribution System. Customers with an Emergency Backup Generation and/or Energy Storage Facility shall ensure that the Emergency Backup Generation Facility never remains connected to the Distribution System for more than 6 cycles (100 milliseconds). As such, the switching transition shall either be OPEN (break before make) or if the switching transition is CLOSED (make before break), then the switching transition shall be within 6 cycles (100 milliseconds).

Customers with permanently affixed Emergency Backup Generation and/or Energy Storage Facilities shall notify Hydro One regarding the presence of such equipment.

#### **B. Load Displacement Generation Facilities**

All Customers with a Load Displacement Generation Facility (“**Load Displacement Customer**”) must notify Hydro One regarding the presence of

their Load Displacement Generation Facility. Customers intending to install a Load Displacement Generation Facility shall consult with Hydro One during the planning of and prior to the installation of any Load Displacement Generation Facility as all proposed Load Displacement Generation Facilities must undergo an assessment process in order to assess the impact of the connection of the proposed Load Displacement Generation Facility to Hydro One's distribution system, including ensuring that there are no system constraints and that capacity is available. Where connection is feasible, the assessment will specify the connection requirements. The cost of performing the assessment will be paid by the Load Displacement Customer. The Load Displacement Customer will also be responsible for the cost of any connection requirements include upstream work or upgrades to the Distribution System.

The Load Displacement Customer shall ensure that the Load Displacement Generation Facility is installed and operated in a manner that does not adversely affect the Distribution System. Furthermore, the Load Displacement Customer shall ensure that the Load Displacement Generation Facility meets the technical requirements specified in Appendix F.2 of the Distribution System Code, the requirements of the Electrical Safety Code and the Technical Interconnection Requirements. In particular, the Load Displacement Customer shall ensure that the generation output from the Load Displacement Generation Facility does not back feed onto the Distribution System.

The Load Displacement Customer shall provide an interface protection for their Load Displacement Facility that detects all applicable faults on the Hydro One distribution system for the purposes of the Load Displacement Customer disconnecting the Load Displacement Generation Facility from the Distribution System in the event of such faults. The Load Displacement Customer shall provide, install and maintain a disconnecting device at the Point of Common Coupling with the Distribution System or some other acceptable location to Hydro One for the purpose of isolating the Load Displacement Generation Facility in case of an Emergency and for work protection. The disconnecting device shall be installed in accordance with the technical requirements specified in Appendix F.2 of the Distribution System Code, the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically, and the Electrical Safety Code.

Proposed Load Displacement Generation Facilities with generation units with a name-plate rated capacity greater than 10 kW are required to successfully undergo a series of commissioning tests before the Customer will be permitted to install same. Hydro One will provide the Load Displacement Customer with a list of testing requirements applicable to the Load Displacement Generation Facility. The requirements will be based on a number of factors, including size and type of generator units and type of connection. The Load Displacement Customer shall complete and confirm the completion of the commissioning testing through the Confirmation of Verification Evidence Report (COVER) process, as established

by Hydro One. All costs associated with commissioning are the responsibility of the Load Displacement Customer.

The Load Displacement Customer shall provide Hydro One with the documentation requested by Hydro One from time to time including, any information specified in the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically,

For greater certainty, Sections 3.5 D, E, F, G, H and I of these Conditions of Service are applicable to Load Displacement Generation Facilities.

### **2.3.7. Meter Installation and Meter Reading**

#### **2.3.7.1 General**

For Retail settlement and billing purposes, Hydro One shall provide, install, own and maintain a Meter Installation for all Customers except where the Customer elects to be a Wholesale Market Participant or is an Embedded Generator. Wholesale Market Participants must provide metering facilities in compliance with the IESO's market rules. Embedded Generators shall supply and install a metering facility that meets Hydro One's requirements, as described in the Hydro One policy directive AMPD-041.

The type of meter will be based on the Customer's Rate class, energy consumption and peak load. The security and accuracy of metering will be maintained under regulations and standards established by Measurement Canada and Hydro One.

When a Customer's power factor is known to be less than 90 per cent, a kVA meter or other equivalent electronic meter shall be used for measuring and billing.

The Meter Installation may be comprised of telecommunications equipment, to facilitate remote meter consumption data retrieval, in accordance with applicable regulations and directions from the Smart Meter Entity. Hydro One, or its authorized agents, will select the form and location of telecommunications equipment. All such equipment shall be operated at Hydro One's cost.

If deemed appropriate by Hydro One, the Customer shall permit Hydro One to connect a revenue interval meter through the Customer's phone line for remote interrogation and data transfer. Hydro One will ensure that there are no material adverse impacts of the revenue meter connection on the Customer's use of the phone line. In the event there is no phone line at the Customer's premise, please refer to Hydro One's policy direct for metering load Customers (AMPD-031 is available upon customer request).

The Meter Installation is owned and maintained by Hydro One. This ownership ends at the meter base, which then feeds into the premise's electrical panel. Any

maintenance requirements for the meter base are the responsibility of the Customer.

Where a Customer has a Combination Meter/Breaker Unit (meter box and breaker), Hydro One is responsible for the meter (meter/adaptor) only. The meter box, meter base and the breaker are owned by the Customer (regardless of any labels, stickers or nameplates identifying otherwise) and any required repairs and maintenance costs are the Customer's responsibility.

Hydro One will not install or reinstall customer or third-party-owned equipment on Hydro One metering. Hydro One will not be responsible for any damage to the Customer's or third-party-owned equipment during the installation, inspection, reading, calibration, maintaining, repair, alteration, removal, or replacement of all or any part of a Meter Installation. The Customer shall ensure the compatibility of Customer or third-party-owned equipment with Hydro One metering.

#### **A. Location of Meter Installations**

The Meter Installation(s) shall be located on the exterior of the building as determined by the layout, and/or subdivision design drawings, and are subject to approval by Hydro One based on standards established by the Electrical Safety Code and the Ontario Building Code. In general, the Meter Installation(s) may be located:

- (i) on the driveway side of the building near the front facing the street or roadway;
- (ii) no more than 3 metres from the front facing the street or roadway;
- (iii) on the wall of the building so that midpoint of the meter after installation will be 1.75 metres plus or minus 100mm from finished grade, or, where this is not possible, the Meter Installation may be installed on poles or on a separate support;
- (iv) in dedicated metering rooms for large general service class Customers (e.g. shopping centres, apartment and condominium buildings), provided that guaranteed continuous access, by key or other appropriate means, is provided to Hydro One or its authorized agent.

If the Meter Installation(s) are located on poles, the poles must be installed, owned and maintained by the Customer on the Customer's property.

Without limiting the above, some components of a Meter Installation may be in more than one location.

## **B. Single Phase – Secondary Metered**

New Customers with Secondary Metered Service shall be metered based on estimated load. Existing Customers with Secondary Metered Service shall be metered based on the actual average monthly peak load for the previous year. Customers with an average monthly peak load of less than 50 kW shall be metered and billed on kilowatt-hours (“kWh”) only. Customers with an average monthly peak load equal to or greater than 50 kW shall be metered and billed on monthly kW as well as kWh, except those in residential and seasonal residential rate classifications.

## **C. Three Phase – Secondary Metered**

All secondary three-phase customers whose average monthly peak load on an annual basis (over the most recent calendar year) is less than 50kW shall be metered and billed based on kWh only. Customers whose average monthly peak load on an annual basis (over the most recent calendar year) is 50kW or more shall be metered based on monthly kilowatt demand, monthly kVA and kWh.

## **D. Primary Metered**

Where a Primary Metered Service is used, the Customer shall own and maintain the entire Distribution System beyond the metering point, which will include poles, conductors and transformers.

## **E. Secondary Metering – Neutral Ground Resistor**

Customers wishing to install or remove Neutral Ground Resistors (NGR) on the secondary side of the service transformer shall inform Hydro One of their intentions and obtain permission before proceeding. The Customer’s metering configuration must be approved by Hydro One. Should the installation or removal of the NGR require the Metering Installation to be altered after the metering has been commissioned by Hydro One, the Customer will be responsible for all costs required to have the metering comply with Hydro One’s standards.

## **F. Totalized Metering**

When a Customer requests totalizing in order to consolidate two or more Delivery Points at separate locations on one contiguous property, the following conditions shall apply:

- (i) the Customer must own the distribution facilities, including transformation beyond the effective metering point. The effective metering point is defined as the location where primary metering is installed;
- (ii) totalizing will be accomplished by either primary or secondary metering, through the use of a remote interrogation meter, or other

- similar units. The Customer shall pay the incremental costs of providing totalizing metering; and
- (iii) the total capacity required is less than the delivery point capacity limits noted in Section 2.1.N.
  - (iv) all meters are of the same nature, e.g., all interval or all non-interval. Totalizing will not occur if there are multiple meters on site which have shared ownership between Hydro One and another party.

### **G. Meter Installation for an Embedded Generation Facility**

Metering for Embedded Generation Facilities shall comply with the requirements of Hydro One's policy directive on Metering for Embedded Generators AMP-041, which can be found at [www.HydroOne.com](http://www.HydroOne.com). See also section 3.5 C.

### **H. Central Metering**

Hydro One may, at its discretion, require that a Customer with two or more buildings be metered by means of a central metering service. The Customer shall pay Hydro One the following labour and material charges:

- (i) for existing service under 45 kW, the Customer shall pay labour and material costs;
- (ii) for existing service over 45 kW, the Customer shall pay labour costs only;
- (iii) for new service under 45 kW, the Customer shall pay for instrument transformer costs; and
- (iv) for new service over 45 kW, the Customer shall not be required to pay for labour or material.

### **I. Metering Pulses**

When Customers request metering pulses or signals for load management purposes, two options exist:

- (i) The Customer provides his own instrument transformers and signal control equipment in a separate cabinet on the load side of Hydro One's Meter Installation; or
- (ii) Hydro One will supply the pulses or signals on the following terms:
  - (a) the Customer pays all costs to provide pulses and signals; and
  - (b) the control for pulse or signal will be brought to a Hydro One terminal block remote from the revenue meter. Consequently, the Customer will not have access to Hydro



One's Meter Installation (Customers are not allowed to connect to Hydro One's instrument transformers).

## **J. Multiple Residential Properties**

Where the owner of an existing bulk metered Multiple Residential Property chooses to convert to individual metered dwelling units, the costs of conversion will be the owner's responsibility. In such cases, the common facilities such as elevators, hall lights, exterior lighting, laundry equipment, central electric water heating, etc., shall be combined on a separate service and billed at the General Service rate with demand metering as appropriate.

### **2.3.7.2 Current Transformer Boxes**

Customers are responsible for supplying, owning, and maintaining meter bases, except for Three Phase services with Complex Metering Installations where Hydro One requires and supplies at no charge a "P" base enclosure. For services requiring additional metering components such as instrument transformers, the Customer shall supply and install the following, all of which are subject to approval by the Electrical Safety Authority and Hydro One:

- (i) instrument transformer enclosures with minimum dimensions of 90cm x 90cm x 30cm;
- (ii) all required conduit as specified by Hydro One; and
- (iii) where appropriate, a self-contained 400 amp meter base complete with a 400 amp current transformer. Hydro One will provide the Customer with an allowance for the cost of the current transformer.

For central metering services, a current transformer enclosure is not required.

### **2.3.7.3 Interval Metering**

#### **A. Conditions for Supplying Interval Metering**

Hydro One shall provide and install an Interval Meter for any existing Customer who currently has an Energy Meter or Smart Meter as per annual demand monitoring.

Hydro One shall install an Interval Meter on any new installation that is forecasted by Hydro One to have an average monthly peak demand greater than 50 kW.

Hydro One may provide an Interval Meter to an existing Customer who upgrades his service size and as a result of the increased service size, the meter must be replaced.

Existing demand billed (equal to or greater than 50 kW) Customers who are below the 1000 kW threshold may request an Interval Meter, by submitting a written request.

## **B. Interval-Metering Data**

Hydro One requires interval-metering data information to settle the Customer's electricity bill. Hydro One will maintain the usage profile of all Customers with Interval Meters and shall make this information available to Customers.

The Customer has the following options to obtain Interval Meter data:

- (i) direct access – The Customer can elect to access the Interval Meter data directly using Customer purchased software. Hydro One will provide the information required to access and use the meter data provided that the Customer executes the Read Only Access Agreement. Key provisions of the Read Only Access Agreement are described in Appendix “A” to these Conditions of Service;
- (ii) Web access provided by Hydro One – when available, Customers will have access to their own Interval Meter data on the Internet using their own account specific password.

If a Customer requires real-time information from an Interval Meter, the Customer shall be responsible for installing and maintaining a telecommunications line at its own expense.

## **C. Smart Metering**

Hydro One has replaced and is replacing metering with Smart Meters, to comply with the government's smart meter initiatives. With implementation of time-of-use pricing, the processes for meter consumption data retrieval and billing will align with applicable regulations and directions from the Smart Meter Entity. If Customers require access to his or her real-time and invalidated data from a Smart Meter, access will be provided under the conditions listed in the Retail Settlement Code, including that additional costs are addressed by the Customer, and, access does not hinder Hydro One's access to the meter data.

If a RPP-eligible Customer wants to opt out of time-of-use pricing and, instead, opt for SPOT pricing, that Customer must have an Interval Meter. As set out in subsection 5.1.5 of the Distribution System Code, the Customer is responsible for all incremental cost associated with the Meter Installation.

### **2.3.7.4 Meter Reading**

If unable to access the premises, Hydro One shall attempt to arrange access to the premises at a time convenient for both Hydro One and the Customer. At its discretion, Hydro One may require the Customer to read the meter and provide the results to Hydro One.

If the Customer does not accommodate Hydro One's request for meter reading or access, the Customer shall be informed in writing of its obligation to contact Hydro One and arrange appropriate access to the meters, or provide Hydro One with the required meter readings.

When reading a meter, Hydro One will collect the meter's consumption data either manually, automatically, or remotely. Where "meter read or meter reading" is used in the following section, or in this document, means the collection of data through any of these methods.

Hydro One reads meters on an hourly, monthly, bi-monthly, quarterly, or annual frequency, depending on Rate classification and service size, and meter readings are obtained either manually or remotely using electronic means. Where Hydro One is unable, for any reason, to obtain a meter reading the Customer may be required to provide a meter reading.

Hydro One reserves the right to use an estimated meter read for both energy and demand quantities when actual readings are not scheduled or available.

To ensure accurate billing and proper operation, it is necessary for Hydro One to read, and visually inspect the meter, at least annually. If Hydro One cannot access the Meter Installation for this purpose after the Customer has been contacted directly, Hydro One reserves the right to require a relocation of the Meter Installation at the Customer's expense. If the situation is not rectified, Hydro One may ultimately disconnect the Customer in accordance with Section 2.2 of these Conditions of Service.

#### **2.3.7.5 Final Meter Reading**

When a final meter reading is required for billing purposes, the Customer shall provide Hydro One with at least five (5) business days' notice of the date the billing is to be discontinued to allow Hydro One to obtain a final meter reading as close as reasonably possible to the required date. The Customer shall provide access to Hydro One for this purpose. If access is not obtained and a final meter reading is not possible, the Customer shall pay an amount based on estimated electrical demand and/or the electrical energy used since the last meter reading.

#### **2.3.7.6 Faulty Registration of Meters**

The security and accuracy of metering is governed by the federal *Electricity and Gas Inspection Act* and associated regulations, under the jurisdiction of Measurement Canada. Hydro One's revenue meters shall comply with the accuracy specifications established by those regulations.

The entity billing a Customer, whether it is Hydro One or a Retailer, is responsible for advising the Customer of any meter error of which it becomes aware and its magnitude and of the Customer's rights and obligations under the

*Electricity and Gas Inspection Act*. The billing entity is also responsible for subsequently settling actual payment differences with the Customer or Retailer.

In the event of incorrect electricity usage registration, the billing entity will rectify billing errors in the manner set out in Section 2.4.4 of these Conditions of Service.

#### **2.3.7.7 Meter Dispute Testing**

Measurement Canada has jurisdiction, under the *Electricity and Gas Inspection Act*, in a dispute between Hydro One and its Customer where the condition or registration of a meter or meter is in question. Hydro One will inform Customers of the assistance provided by Measurement Canada in dispute investigations.

Meter dispute testing is typically the last step in a multi-stage process between the Customer and Hydro One. The process typically begins with a Customer high bill inquiry, the object of which is to validate that the bill calculations, charges and bill determinants are accurate. The process may include any or all of the following steps, as required: collection of problem details from the Customer; analysis of billing details including calculation of charges and appropriateness of meter readings; comparison of estimated readings with past usage; obtaining a check meter reading; provision of information to assist the Customer understanding of and confidence in the bills; and field visit to the Customer premises to verify meter reading, meter data and test meter operation.

At any point in this process, if Hydro One staff determine suspect meter operation, a meter dispute test will be initiated. However, if Hydro One is satisfied with meter operation and accuracy of billing, and the Customer is not satisfied, the Customer will be referred to Measurement Canada.

If the services of Measurement Canada are requested by the Customer or Retailer to resolve the issue, Hydro One may charge the Customer for the costs of processing the application to Measurement Canada and removing and transporting the meter to a testing location. If the dispute is substantiated by Measurement Canada and the resolution is in the favour of the Customer, Hydro One shall bear such costs.

Measurement Canada will follow its dispute investigation process and issue a decision. Hydro One or the Customer who initiated the dispute investigation both have the option to appeal the decision and follow Measurement Canada's appeal process.

## **2.4. Tariffs and Charges**

### **2.4.1. Service Connection**

#### **2.4.1.1. Rate Classifications**

When assigning a Customer to the appropriate Rate classification, Hydro One considers the nature and use of the Customer's electricity service, as well as the density of the Customers connected to the Distribution line. The Distribution Services Rates for each classification are based on the cost of delivering electricity to that class of Customers and meeting their electricity supply needs.

The main Rate classifications are Residential-Year-Round, Seasonal Residential, General Service, Lighting (Street Light and Sentinel), Sub-Transmission, MicroFIT Generator and Distributed Generation. All Hydro One Rates charged for each Rate classification for Distribution Services, including charges for services provided to specific Customers where the costs are not recovered through the Distribution Service Rates ("Miscellaneous Distribution Charges") and pass-through charges, are subject to OEB approval. In addition, Hydro One is required to pass through the OEB-approved charges for Wholesale Market Services, Retail Transmission Services, Standard Supply Service charge and Rural and Remote Rate Protection.

#### **2.4.1.2. Components of Distribution Rates**

Hydro One Distribution Service Rates include a monthly service charge component and a volume-based component. For Demand Billed Customers, the volume Rate is a per kW charge. The billing demand shall be taken as 90% of the kVA or 100% of the measured demand in kW, whichever is greater. For Energy Only Customers, the volume Rate is a per kWh charge. The monthly service charge component is designed to recover some common costs of Distribution Services that are independent of electricity use. All other Distribution Service costs are recovered through the volume Rate.

#### **2.4.1.3. Rural or Remote Electricity Rate Protection and Debt Retirement Charge**

Hydro One is required to collect rural and remote rate protection in accordance with the Regulations made pursuant to Section 79 of the *Electricity Act* and Debt Retirement Charges set in accordance with Section 85 of the *Electricity Act*.

#### **2.4.1.4. Rate Schedules and Notice of Rate Changes**

The OEB-approved Rates and charges for Distribution Services are as set out in the Rate schedules available at [www.HydroOne.com](http://www.HydroOne.com). Notice of Rate changes may be published in major local newspapers and shall be mailed to all Customers with the first bills issued using the revised Rates.

Hydro One is in the process of introducing a standard set of rate classifications which have been approved by the OEB and changes will be phased in over a transition period expected to be completed in 2012.

## **2.4.2. Energy (Electricity) Supply**

### **A. Standard Supply Service**

Hydro One shall provide Customers connected to the Distribution System with access to electricity through Standard Supply Service. All Customers are Standard Supply Service Customers until Hydro One is informed of and completes the Customer transfer to a competitive Retailer, all in accordance with Section 10 Service Transaction Requests of the Retail Settlement Code.

Hydro One may, at its discretion, refuse to process a Service Transfer Request for a Customer to switch to a Retailer if that Customer is in arrears to Hydro One for Distribution Services and/or Standard Supply Service.

Where a Service Transfer Request is made, a switch bill will be issued to the Customer. This bill will be based on an actual meter read unless the Customer, Hydro One and the Retailer agree in writing to an alternative. The effective date of the service transfer shall be the next scheduled meter reading date unless a request is made for a special meter reading and Hydro One can accommodate the request. The OEB-approved special meter read charge will apply.

All service transfers, except a return to Standard Supply Service, must be supported by the Customer's written authorization, a copy of which must be retained by the applicable competitive Retailer.

### **B. Pricing of Standard Supply Service, including Regulated Price Plan (RPP)**

According to applicable regulations made under the Ontario Energy Board Act and the Standard Supply Code, the pricing for Standard Supply Service is as follows:

- (i) Customers with conventional meters are charged two-tier Rates under the Regulated Price Plan (RPP), which Rates depend on the volume of electricity used;
- (ii) Customers with Smart Meters are charged mandatory time-of-use Rates under the RPP; and
- (iii) Customers with Interval Meters are charged the Hourly Ontario Electricity Prices (HOEP) applicable to the times of electricity use unless

- (1) the Customers are eligible for RPP two-tier pricing, according to the regulations made under the *Ontario Energy Board Act* and the Standard Supply Code, and
- (2) these eligible Customers have elected RPP two-tier pricing as described in point (i) above, in which case such Customers shall be charged RPP two-tier pricing.

All rates are determined, approved or fixed by the Ontario Energy Board.

Customer eligibility for RPP is in accordance with applicable regulations made under the Ontario Energy Board Act and the Standard Supply Code. The kilowatt threshold for eligible low volume consumers that are not residential is 50 kW or less, or less than 250,000 kWh, per year consumption according to the applicable regulations. Hydro One will categorize a Customer as an Electing Spot Consumer only when notified by the Customer in writing, and where the Customer has an Interval Meter or another eligible time-of-use metering infrastructure capable of providing data on at least an hourly basis.

Hydro One will issue an RPP variance settlement amount when:

- advised by the Customer of a move out of Ontario;
- following receipt of a notice that the Customer will buy electricity from a Retailer;
- advised by the Customer of electing to Spot; or
- the Customer ceases to be eligible for RPP.

The variance amount will be a charge or credit, and will be calculated in accordance with the methodology established by the Ontario Energy Board.

Eligible RPP and Spot Customers who wish to switch from RPP to Spot or from Spot to RPP may only do so once per calendar year

### **C. Competitive Retailer Supplied Electricity**

Hydro One does not provide Standard Supply Service to a Distribution System connected Customer that has contracted with a Retailer for electricity supply. Hydro One remains obligated to provide Distribution Services to such Customer in accordance with these Conditions of Service. The Retailer-supplied Customer will be billed either by Hydro One under Distributor Consolidated Billing or by the Customer's designated Retailer under Retailer Consolidated Billing, as prescribed in the Retail Settlement Code.

### **2.4.3. Deposits**

For the purposes of this Section 2.4.3, residential Customers include Year-round Residential, Seasonal Residential, Energy Billed Farm Customers with a principal residence, and bulk metered residential condominiums.

For the purposes of this Section 2.4.3, non-residential Customers include Farm with no principal residence, General Service, Sub-transmission, Unmetered Scattered Loads and Lighting (Street and Sentinel).

#### **A. Requirements for Security Deposit**

Hydro One may require a security deposit from a Customer unless the Customer has a good payment history of one year in the case of a residential Customer, five years in the case of a non-residential Customer in a less than 50 kW demand rate class, or seven years in the case of a non-residential Customer in any other rate class. The time period that makes up the good payment history must be the most recent period of time and some of the time period must have occurred in the previous 24 months. Hydro One may offer other options to eliminate the need for security deposits to specific customer classes at its discretion.

Security deposits may be required at the time the Customer initially applies for service, or subsequently when a Customer has failed to maintain a good payment history. The security deposit amount will be applied to the Customer's electricity account and appear as a charge on the next electricity bill issued.

In the event Hydro One applies all or part of a security deposit to offset amounts owing by a residential Customer, Hydro One may require the Customer to repay the amount of the security deposit that was so applied.

#### **B. Acceptable Forms of Security**

Hydro One will accept security deposits in either of the following forms, at the discretion of the Customer:

- (i) cash or cheque; or
- (ii) automatically renewing irrevocable letter of credit from a bank or financial institution as defined in the *Bank Act*.

At the Customer's discretion, a security deposit required at the time of application for service may be paid in equal monthly instalments over a period of up to six months. Customers wishing to pay in instalments must contact Hydro One at 1-888-664-9376 to make such payment arrangements.

#### **C. Calculation of Security Deposit Amounts**

Billing Cycle Factors shall be 2.5 for monthly-billed Customers, 1.75 for bi-monthly billed Customers and 1.5 for quarterly-billed Customers.

Security deposit levels for new Customers shall be determined in the following manner:

Billing Cycle Factor X estimated bill based on Customer's average monthly load during most recent 12 consecutive months within the past two years.



Where 12 consecutive months of relevant usage information within the past two years is not available, the Customer's average monthly load shall be based on a reasonable estimate made by Hydro One.

#### **D. Limits on amount of security required**

##### **All rate classes:**

The maximum amount of a security deposit shall be calculated based on the Billing Cycle Factor multiplied by the estimated bill based on the Customer's average monthly load during the most recent 12 consecutive months within the past two years (or Hydro One's reasonable estimate of monthly load where there is insufficient history).

Where a Customer, other than a residential customer, has a payment history which discloses more than one disconnection notice in a relevant 12-month period, Hydro One will use that Customer's highest actual or estimated monthly load to calculate the security deposit amount.

##### **Non-residential Demand Billed (equal to or greater than 50 kW) rate class:**

Despite the above, where the Customer provides Hydro One with a credit rating from a recognized credit rating agency, the maximum amount of security deposit shall be reduced in accordance with the following table. The table below uses Standard & Poor's ratings, but equivalent ratings from Moody's and Dominion Bond Rating Services will be accepted.

| Credit Rating (using Standard & Poor's Ratings) | Allowable Reduction |
|---|---------------------|
| AAA- and above or equivalent                    | 100 per cent        |
| AA-, AA, AA+ or equivalent                      | 95 per cent         |
| A-, From A, A+ to below AA or equivalent        | 85 per cent         |
| BBB-, From BBB, BBB+ to below A or equivalent   | 75 per cent         |
| Below BBB- or equivalent                        | 0 per cent          |

##### **Exception:**

Despite the above, for a non-residential > 5000 kW Customer who has established a good payment history for the relevant seven year period, Hydro One will return only 50 per cent of the security deposit held.

#### **E. Review and Updating of Security Deposits**

Your security deposit will be reviewed annually to determine whether it should be:

- Fully refunded due to good payment history;
- Partially refunded due to a reduction in electricity use;
- Increased due to an increase in electricity use;

- Any amendments to the calculation process;
- Remain unchanged.

Where some or all of the security is to be returned to the Customer, Hydro One will promptly credit the Customer's account including applicable interest as dictated by the Distribution System Code.

#### **F. Interest on Security Deposits**

Interest is payable on cash/cheque security deposits and shall accrue monthly commencing on receipt of the total deposit required. The interest rate shall be at the Prime Business Rate as published on the Bank of Canada Web site, less two (2) per cent, updated quarterly, to a minimum of zero per cent.

Interest due will be paid out quarterly, or on return of the security deposit or closure of the account, whichever comes first. Interest will be paid out as a credit to the account.

#### **G. Waiver/return of security deposit**

At Hydro One's discretion, residential Customers who do not have a payment history with Hydro One for the relevant time period, will be asked to provide security at application for service or for an electricity account. At Hydro One's discretion, such security may be waived if the Customer provides a reference letter that confirms good payment history from another electricity or natural gas utility in Canada, where the Customer was previously a customer. The letter must indicate good payment history for at least 12 months if the Customer is residential and/or less than 50 kW demand, or seven years if the Customer has a demand equal to, or greater than, 50 kW demand. Some of this bill history time must have occurred within the previous 24 months. Security may also be waived if the Customer provides Hydro One a Credit Bureau report indicating a positive credit factor, or, in lieu of security, consent for Hydro One to release customer information to a Credit Bureau.

Security deposits shall be waived or returned for all other Customers demonstrating good payment history with Hydro One for the relevant time period.

For all Customers except non-residential > 5000 kW, a security deposit required by Hydro One shall be waived on receipt by Hydro One from the Customer, of a satisfactory credit check from TransUnion, Equifax or D&B credit reporting agencies. The decision as to whether the credit check is satisfactory is within Hydro One's sole discretion.

Effective October 1, 2011, Hydro One will waive the requirement to provide a security deposit for Eligible Low-Income Customer provided the Customer contacts Hydro One to request such a waiver and their low-income eligibility is confirmed. Furthermore, where a social service agency or a government agency advises Hydro One that it is assessing a Customer for eligibility as an Eligible

Low-Income Customer, the due date for payment of the security deposit shall be extended for 21 days pending the eligibility decision. Additionally, an Eligible Low-Income Customer may, after October 1, 2011, request a refund of any security deposit previously paid to Hydro One, after application of the security deposit to any outstanding arrears on said customer's account.

### **Good Payment History Criteria**

A Customer is deemed to have a good payment history unless, during the relevant time period specified below, the Customer has:

- (i) received more than one disconnection notice from Hydro One;
- (ii) has more than one cheque given to Hydro One by the Customer returned for insufficient funds;
- (iii) has more than one pre-authorized payment to Hydro One returned for insufficient funds; or
- (iv) a Disconnect/Collect Trip has occurred.

If any of the preceding events occur due to an error by Hydro One, the Customer's good payment history shall not be affected.

Relevant time periods for establishing a good payment history are the most recent period of time, with at least some of the time occurring in the previous 24 months.

### **Relevant Time Period**

In order for Hydro One to waive or refund a security deposit, good payment history criteria must be maintained by the Customer for the following time periods:

Residential Customer: one year's Good Payment History

Non-residential Customer < 50 kW: five years' Good Payment History

Non-residential Customer  $\geq$  50 kW: seven years' Good Payment History

Non-residential Customer > 5000 kW rate class: after seven years' Good Payment History only 50 per cent of the security deposit held will be returned. The balance of the security deposit will be retained by Hydro One until closure of the account.

Security deposits shall not be applied to active account arrears and shall not constitute payment of an outstanding account, in whole or part. If Hydro One is in possession of a cash security deposit when the account is terminated, the deposit plus accrued interest, or applicable portion thereof, shall be returned to the Customer through a credit applied to the final bill or a cheque, at Hydro One's discretion. Hydro One will return any excess deposit amount to the Customer directly and within six (6) weeks after account closure. Non-cash security will be

applied after the final bill due date, if full payment is not received from the Customer.

If a security deposit amount is applied due to a poor payment history, neither a satisfactory utility reference nor credit check will be accepted to waive the deposit. Only maintenance of a good payment history will allow for refund of the deposit. If good payment history is not maintained, Hydro One will not accept another utility reference letter. Utility reference letters are valid for a one-year period.

#### **H. Enforcement where security deposit not paid**

Payment of security deposits identified as a condition of service or continuing service will be enforced through collection activities for amounts due, up to and including disconnection of electrical service (See Section 2.2 of these Conditions of Service).

#### **I. Security from Embedded Distributors**

Embedded Distributors shall post security deposits with Hydro One if a good payment history is not maintained for seven years. Deposits will be calculated according to the following:

##### **Maximum Security Deposit Amount. Wholesale Market Participant:**

Security Deposit amount will be calculated based on average monthly non-competitive electricity costs billed by Hydro One, multiplied by the Billing Cycle Factor of 2.5.

##### **Maximum Security Deposit Amount. Not a Wholesale Market Participant:**

Security deposit amount will be calculated based on Billing Cycle Factor of 2.5 multiplied by the average monthly non-competitive electricity costs plus competitive electricity costs, using the average monthly consumption and cost of energy used by the IESO for the purpose of determining prudential support obligations for Distributors.

##### **Security Deposit Reductions for Good Payment History:**

Hydro One will reduce the security deposit amount required from an Embedded Distributor based on the following good payment history time periods listed below:

- (i) 25 per cent reduction for 2 years;
- (ii) 50 per cent reduction for 3 years;
- (iii) 75 per cent reduction for 5 years; and
- (iv) 100 per cent reduction for 7 years.

Where a security deposit has been reduced for good credit rating (see D, non-residential Demand Billed) it will be further reduced if good payment history periods outlined above are met.

**Review and Adjustment of Security:**

Hydro One shall review security deposit amounts on a periodic basis to determine whether:

- (i) a portion of the security deposit is to be returned to the customer based on the number of years of good payment history demonstrated; or
- (ii) the security deposit amount is to be adjusted based on a recalculation of the maximum security deposit amount.

**J. Acceptable Forms of Security**

Hydro One shall accept security deposits in the form of cash or cheque, or automatically renewing, irrevocable letter of credit from a bank as defined in the *Bank Act*, or a combination thereof, at the discretion of the Customer.

**2.4.4. Billing**

In this Section 2.4.4, references to monthly, bi-monthly, quarterly, and annually are notional and approximate time periods only. They are not to be construed as calendar-based time periods.

**A. Billing Frequency**

Depending on Rate classification and service size, Customers are billed on a monthly, or quarterly frequency. Starting in 2010 and continuing through 2012, Hydro One is phasing out bi-monthly billing frequency as time-of-use pricing is implemented. Customers billed on a bi-monthly basis will be moved to monthly frequency.

**B. Low Use Billing Suspension Credit**

Billing suspension of any account may be granted for General Service Energy Billed (GSe) class customers with less than 2,500 kWh per year that was connected prior to January 1, 1996. The Customer must sign an agreement annually for each year that a service suspension is requested. Only one service suspension will be granted per 12-month period, for a duration of either four months or six months. The suspension is for either a four-month or six-month period, and the Customer will be credited in an amount equal to the monthly service charge multiplied by the number of months suspended. A charge equal to the suspension credit will be applied if the Customer exceeds the limit of 2,500 kWh per year or takes power during the identified period of suspension. In addition to the charge, the Customer will be billed for the kWh consumed in excess of 2,500 kWh per year.

### **C. Use of Estimates**

In months where a bill is issued but no reading is obtained, Hydro One will estimate energy and demand in order to determine billing quantities. The estimate is based on historical usage for the premise, or a predetermined quantity if there is no historical usage information available.

Customers who do not have an interval meter, or are not yet transitioned to time-of-use pricing, may avoid receiving bills based on estimated meter readings if they provide Customer-obtained meter reads that pass validation checks and are provided according to processes and timing established by Hydro One for billing purposes.

#### **Customers with Smart Meters on Time-of-Use Pricing**

In a billing period where meter reading data is not available, Hydro One or the Smart Metering Entity will estimate consumption in order to determine billing quantities. The estimate is based on historical usage for the premise, or a predetermined quantity if there is no historical usage information available.

### **D. Closing of Account**

If a Customer wishes to close their electricity account, Hydro One requires five business days to arrange for a final read and issue a final bill.

### **E. Pro-ration of Accounts**

Accounts will be pro-rated where the bill to a Customer is for a period shorter or longer than the standard billing period or where rates have been revised effective on a date not coincident with the Customer's billing or meter reading date.

### **F. Budget Billing Plan**

A budget billing plan is available to all Standard Supply Service Customers and retailer-enrolled Customers on Distributor Consolidated billing. To help smooth electricity costs over the year, the plan bills an equal portion of the previous year's charges per bill period and then reconciles the balance owing in the anniversary month. Periodic adjustments may be made to the regular budget bill amount due to Rate or usage changes.

The budget billing plan is not available to demand-billed Customers whose meters are read monthly.

### **G. Billing Errors: Over and Under Billing**

Where a billing error, from any cause, has resulted in a Customer or Retailer being overbilled, and where Measurement Canada has not become involved in the dispute, Hydro One will credit the Customer or Retailer with the amount

erroneously billed, for up to a two-year (2-year) period. Where the billing error is not the result of Hydro One's standard billing practices (i.e. estimated meter reads), Hydro One will pay interest on the amount credited at the same rate of interest as dictated in the Retail Settlement Code.

Where a billing error, from any cause, has resulted in a Customer or Retailer being under-billed, and where Measurement Canada has not become involved in the dispute, the Customer or Retailer shall pay to Hydro One the amount that was not previously billed. In the case of an individual Customer who is not responsible for the error, the allowable period of time for which the Customer may be charged is two (2) years for residential customers, including seasonal and farm residence, and all other customers. Where the Customer is responsible for the under-billing, whether by way of tampering, wilful damage, unauthorized energy use or other unlawful actions, the Customer shall pay a late payment charge, as determined by Hydro One in accordance with these Conditions of Service.

For either situation, where Measurement Canada is involved in instances of checking meter registration accuracy, Measurement Canada will issue a decision. Hydro One or the Customer who initiated the dispute investigation both have the option to appeal the decision and follow Measurement Canada's appeal process.

#### **H. Transformation Loss Adjustment**

A Transformer Loss Adjustment is applicable to Sub-Transmission rate class Customers, requiring a billing adjustment for transformer losses as a result of being metered on the secondary side of a transformer. The OEB-approved transformer loss adjustment is as set out in the rate schedules available at [www.HydroOne.com](http://www.HydroOne.com).

#### **I. Transformer Loss Allowance**

A Transformer Loss Allowance is applicable to all Customers excluding Sub-Transmission rate class Customers requiring a billing adjustment for transformer losses as a result of being metered on the primary side of a transformer. The OEB-approved transformer loss allowance is as set out in the Rate schedules available at [www.HydroOne.com](http://www.HydroOne.com).

#### **J. Customer-Supplied Transformation Allowance**

Customer-supplied Transformation Allowance is applicable to all Customers excluding Sub-Transmission rate class customers, who are demand or energy-billed and providing their own transformers. Embedded Generation Customers qualify for Customer-supplied Transformer Allowance only for load taken from Hydro One. When the transformer is proven not to be Hydro One owned, a credit will be given to the account holder. The OEB-approved Customer-supplied transformation allowance is as set out in the Rate schedules available at [www.HydroOne.com](http://www.HydroOne.com).

## **K. Annual Monitoring of Electricity Usage**

For Energy Meter and Smart Meter non-residential Customers, annual consumption will be monitored to identify services that have grown beyond 400,000 kilowatt-hours annually. At Hydro One's discretion an interval meter will be installed for the Customer's identified above.

For non-residential Interval Metered Customers, average monthly billable demand will be monitored to identify services that have dropped below 50 kW and at Hydro One's discretion a smart meter will be issued.

Billed demand is monitored during the calendar year to determine whether the account should be reclassified for billing purposes. The review occurs in the first quarter of the year, with the measurement period being January 1 through December 31 of the previous year and with the average monthly billing demand calculated based on the measurements taken for bills issued within that time period. Reclassification of an account, with no retroactive adjustment, will be effective the next scheduled bill after the annual review.

General Service Rate reclassification will occur if the average monthly billable demand over the calendar year crosses or is equal to the 50 kW for Interval Metered Energy Only Customer's, then the Customer will be reclassified as a Demand Billed Customer. If the average monthly billable demand falls below 50kW for the calendar year, then the Customer will be reclassified as an Energy Only Customer.

For the purposes of Rate reclassification between General Service and Sub-transmission, a Customer will be reclassified and moved into Sub-transmission if the Customer's average monthly billable demand is greater than or equal to 500kW over the calendar year. Current Sub-transmission Customers will be moved out of the Sub-transmission Rate class to General Service if the Customer's average monthly billable demand over the previous year was less than 300kW.

Alternatively, where a non-residential Customer (in either the General Service or Sub-Transmission Rate classification) requests Hydro One to do a review, Hydro One will reclassify the Customer if billable demand for a period of five consecutive months falls outside limits applicable to the customer's current Rate classification, as per the Distribution System Code. Such review will not take place more than once per calendar year.

## **L. Billing Determinants for Demand Customers**

Hydro One establishes billing determinants for demand customers at the greater of 100 per cent of kW and 90 per cent of kVA where kVA metering is installed. When a Customer's power factor is known to be less than 90 per cent, a kVA meter or other equivalent electronic meter shall be used for measuring and billing.



## **2.4.5. Payments and Overdue Account Interest Charges**

### **A. Payment Options**

Customers may pay their electricity bills using any of the following methods: cheque or money order mailed with the remittance stub portion of the bill to Hydro One at the address on the stub; in person at most Canadian financial institutions; through automated banking machines, telephone banking or Internet bill payment services offered through the Customer's financial institution. All payments must be in Canadian dollars.

Hydro One also offers a pre-authorized payment option.

### **B. Late Payment Charges**

Bills are due on the billing date. A late payment charge is applied and shall be paid by the Customer if payment is not received within nineteen (19) days of the billing date. Hydro One provides customers with a 16-day payment period, plus 3 days for the bill to be sent. The required payment date printed on the bill is set 19 days after the billing date. When a required payment date is a weekend or holiday, the payment will be required on the next business day.

Hydro One's late payment charge is 1.5% per month, compounded monthly (19.56% per year). Late payments are calculated from the billing date to the date the next bill is issued. The late payment charge of 1.5% is applied to the outstanding balance. If partial payment is made within nineteen (19) days of the billing date, the late payment charge will apply only to the amount outstanding after deducting the partial payment. Late payment charges will be added to the Customer's next bill.

An allowance of 3 days is provided after the requirement payment date, to allow for payment receipt by mail.

Customers who are on electronic funds transfer/pre-authorized payment will have their payment amount automatically withdrawn from their designated bank account on the 19<sup>th</sup> day after the billing date. The withdrawal date and amount is clearly indicated on each bill.

### **C. Allocation of Payments**

Any payments received will be applied to the total outstanding balance of the electricity account. An outstanding balance could include the billed amounts, security deposits, late payment, or other changes. Payment cannot be directed to specific portions of the outstanding balance.

## **2.4.6. Arrears Management Program**

### **A. Residential Customer**

A residential Customer may request to enter into a payment agreement for the total outstanding balance of the electricity account. Any security deposit held by Hydro One shall be applied to the outstanding balance. The Customer may be required to repay the security deposit and pay a down payment of up to 15% of the total outstanding balance as part of the payment agreement.

### **B. Eligible Low-Income Customer**

Where the Customer is an Eligible Low-Income Customer, the Customer may be required to repay the security deposit and shall pay a down payment of 10% of the electricity charge arrears accumulated, inclusive of any applicable late payment charges but excluding other service charges, as part of the payment agreement.

Where an Eligible Low-Income Customer enters into a payment agreement, Hydro One shall waive any service charges related to collection, disconnection, non-payment or load control devices and shall not include such charges in the payment agreement only if the Eligible Low-Income Customer is entering into the payment agreement for the first time or is entering into the payment agreement subsequent to having successfully completed a previous payment agreement as an Eligible Low-Income Customer. Hydro One shall not impose any late payment charges on an Eligible Low-Income Customer after said Eligible Low-Income Customer has entered into a payment agreement in respect of the amount that is the subject of that agreement. Notwithstanding anything in this paragraph, Hydro One shall not be required to waive any late payment charges accrued to the date of the payment agreement.

This paragraph B shall become effective October 1, 2011.

## **2.5. Customer Information**

### **A. Retail Settlement Code Requirements**

Hydro One shall provide current and historical usage information to Customers and retailers in accordance with Chapter 11 of the Retail Settlement Code.

Customers with remotely read Interval Meters shall have access to meter usage data in accordance with Section 2.3.7.3 or over the Internet after having obtained a password from Hydro One for secure access.

## **Current Usage Data**

Customers with cumulative volume, demand and non-remotely read Interval Meters shall receive their current usage data on their electricity bill from Hydro One.

Customers with remotely read or non-remotely read Interval Meters shall have access to meter usage data in accordance with the Read Only Access agreement to be executed by Hydro One and the Customer and in accordance with the standards set out in the Retail Settlement Code. Key provisions of the Read Only Access Agreement are described in Appendix “A” to these Conditions of Service.

Hydro One will provide access to a Customer’s meter or meter information under the following conditions:

- (i) Hydro One will select the access windows it requires to read the meter;
- (ii) if Hydro One’s access to the meter is hindered or a Customer’s access to the meter corrupts usage information, Hydro One may suspend a Customer’s right to access until any outstanding problems are resolved;
- (iii) the Customer shall pay the reasonable cost of any software, hardware and other services required for a Customer to obtain direct access to meter information. This may include installation of a secondary meter access system;
- (iv) the Customer shall bear any cost incurred by Hydro One to correct problems caused by a Customer’s direct access to the meter;
- (v) if the Customer assigns his or her right to direct meter access to a Retailer or third party, the Customer shall be responsible for the actions of the assigned party.

## **Usage Data Generated by Smart Meters**

Customer access to their hourly electricity usage information will be available over the internet upon their switch to Time-of-Use pricing. Access to this information is subject to acceptance of the End User Agreement on the Hydro One website.

## **Historical Information**

Provision of Customer-specific information to retailers through the Electronic Business Transaction (EBT) system shall be provided at no charge. Requests to deliver data directly to Retailers and Customers, if not delivered through the EBT System, shall be honoured twice a year, at no direct charge to a Retailer or Customer. Additional requests shall also be honoured, but Hydro One may, at its discretion, charge a reasonable fee for such additional requests. A request is considered to be data delivered to a single address.

Hydro One will provide a Customer with at least 12 months, where available, of historical usage information, information about the Customer's meter configuration, and payment information ("Historical Information"). The Historical Information can be released to the Customer or any third party designated by the Customer, subject to the following:

- (i) if the third party is a Retailer, the Customer has provided the Retailer with written authorization for the release; or
- (ii) if the third party is someone other than a Retailer, the Customer shall have provided Hydro One with written authorization for the release.

Notwithstanding the above, Hydro One will not provide the Retailers with data related to time-of-use consumption for customers in areas where Hydro One has elected to implement time-of-use pricing.

## **B. Protection of Individual Privacy and Consumer Information**

### **(i) Privacy Legislation and the Licence**

Hydro One is subject to provincial and federal privacy legislation that contains specific restrictions concerning the collection, use and disclosure of Personal Information.

In addition, the Licence prohibits Hydro One from disclosing information regarding a Customer to any other party without the written consent of the Customer, except where such information is required to be disclosed:

- (a) to comply with any legislative or regulatory requirements, including the conditions of the Licence;
- (b) for billing, settlement or market operation purposes;
- (c) for law enforcement purposes; or
- (d) to a debt collection agency for the processing of past due accounts of the Customer.

The Licence permits Hydro One to disclose information regarding a Customer where the information has been sufficiently aggregated such that the Customer's particular information cannot reasonably be identified.

### **(ii) Hydro One's Collection, Use and Disclosure of Customer Information**

Hydro One collects information about its Customers, including Personal Information (collectively, "Customer Information"), primarily directly from its Customers, whether verbally, in writing or via the [www.HydroOne.com](http://www.HydroOne.com) website; however, it may also collect from other sources, including credit bureaus or personal references. This information collected is primarily:

- (a) information establishing identity (for example: name, address, phone number, date of birth, etc.);
- (b) information related to the provision of electricity and/or distribution services by Hydro One and other electricity distributors; and
- (c) information about financial behaviour, such as payment history and creditworthiness.

Hydro One collects the information described above for the following purposes:

- (a) to establish and maintain responsible commercial relations and operations, including for purposes of billing and debt collection and for assessing Customer credit history from time to time to determine whether Hydro One requires a security deposit;
- (b) to understand Customer needs and eligibility for products and services;
- (c) to recommend particular products and services to meet a Customer's needs;
- (d) to develop, enhance, market or provide electricity products and services;
- (e) to manage and develop Hydro One's businesses and operations;
- (f) to meet legal and regulatory requirements; and
- (g) to provide Customers with information about the electricity market and rates.

Hydro One does not trade or sell Customer Information to others. Hydro One shall not use or disclose Customer Information for purposes other than those for which it was collected, except with the Customer's consent or in accordance with Applicable Laws.

The information will be used and disclosed internally within Hydro One by and among staff members (for example, its customer care staff and its internal auditors) that need the information in the performance of their duties and where the use and disclosure is necessary and proper in the discharge of Hydro One's business.

In some instances, Customer Information will be shared with third party service providers who perform services on Hydro One's behalf, such as customer service, outage management, data storage, data cleansing and the like. These third party service providers are given only the information necessary to perform those services that Hydro One has contracted them to provide. Additionally, they are prohibited from storing, analyzing or using that information for purposes other than the services they have been contracted to provide. Hydro One uses contractual means to require such service providers to protect Customer Information from loss, theft and

unauthorized access, use, disclosure and otherwise in a manner consistent with the privacy policy and practices established by Hydro One. In the event our service provider is located outside of Canada, the service provider is bound by, and Personal Information may be disclosed in accordance with, the laws of the jurisdiction in which the service provider is located.

In order to measure performance and develop service improvements, Hydro One may disclose Customer information to third party service providers for the purpose of conducting surveys on Hydro One's behalf. The providers are bound by strict confidentiality contracts to use the information for the sole purpose of the survey. Customers may choose not to have their information released by Hydro One to a service provider for survey purposes, by contacting 1-888-664-9376.

**(iii) Access to Personal Information**

Hydro One retains Personal Information only as long as necessary for the fulfilment of the purposes described in this Section.

Customers may obtain access to their Personal Information held by Hydro One at any time and review its content and accuracy, and have it amended as appropriate. However, access may be restricted as permitted or required by law. Customers can request access by contacting 1-888-664-9376.

Further information about Hydro One's practices and procedures concerning the collection, use and disclosure of Personal Information can be found in Hydro One's Privacy Code (available at [www.HydroOne.com](http://www.HydroOne.com)).

## **SECTION 3      CUSTOMER CLASS SPECIFIC**

### **3.1. Residential**

#### **A. Residential-Year-Round**

This Rate classification is applied to a Customer's principal residence and may include additional buildings served through the same meter, provided they are not rental income units. To be classified as year-round residential, all of the following criteria must be met:

- (i) occupant represents and warrants to Hydro One that for so long as he/she has year-round residential rate status for the identified dwelling, he/she will not designate another property that he/she owns as a year-round residence for purposes of Hydro One's Rate classification;
- (ii) the Customer must live in this residence for at least four (4) days of the week for eight (8) months of the year and the Customer does not reside anywhere else for more than three (3) days a week during eight (8) months of the year;
- (iii) the address of this residence must appear on the Customer's documents such as driver's licence the Customer's mailing address on the Customer's electricity bill, credit card invoices, property tax bill, etc.; and
- (iv) Customers who are eligible to vote in Provincial or Federal elections must be enumerated for voting purposes at the address of this residence.

Multi-unit residential establishments such as apartment buildings supplied through one service (bulk metered) normally shall be classified as General Service; however, up to four residential units may, at Hydro One's discretion, be classified as Residential-Year-Round.

Where electricity service is provided to a combined residence and business (including agricultural usage) and the wiring does not provide for separate metering, the classification shall be at the discretion of Hydro One, based on such considerations as the estimated predominant consumption.

#### **A.1 Residential UR/U2**

Customers classified as Residential UR2 are year-round residences in an urban density zone.

#### **A.2 Residential R1**

Customers classified as Residential R1 are year-round residences in a Medium Density Zone.

### **A.3 Residential R2**

Customers classified as Residential R2 are year-round residences in a Low Density Zone.

### **A.4 Seasonal Residential**

This Rate classification includes any residential service not meeting the residential-year-round criteria. As such, the seasonal residential class includes cottages, chalets, and camps.

Where electricity service is provided to a combined residence and business (including agricultural usage) and the wiring does not provide for separate metering, the classification shall be at the discretion of Hydro One, based on such considerations as the estimated predominant consumption.

## **B. Farm**

Hydro One has introduced a standard set of rate classifications, approved by the Ontario Energy Board. Premises formerly classified as Farm Single Phase F1 or Farm Three Phase F3, has been allocated either to a Residential Year Round classification or General Service classification, depending on the size, connection and nature of electricity use, the density zoning, and presence of a principle residence.

Farms with a principal residence, and not classified as demand billed, will be classified as Residential and in the appropriate density zone. A farm business that does not have a principal residence, or a farm that does have a residence but is demand billed, will be classified as General Service and in the appropriate General Service Rate classification.

## **C. Rural or Remote Electricity Rate Protection:**

Under Section 79 of the *Ontario Energy Board Act* and associated regulations, qualifying year-round residences are eligible to receive rural or remote electricity rate protection. The monthly service charge amount for eligible Customers is reduced by the applicable rural or remote electricity rate protection.

## **D. Connection and Upgrade Charges**

A Residential or Seasonal Residential Customer who makes a written request for a Connection and whose building lies along Hydro One's existing distribution lines shall pay Hydro One Connection charges in accordance with Section 2.1.1.

A Residential or Seasonal Residential Customer who makes a written request for a Connection and whose building is within Hydro One's service area shall pay Hydro One Connection charges in accordance with Section 2.1.2.



A Residential or Seasonal Residential Customer who requests an upgrade in connection assets at its premises shall pay the net cost of upgrading the connection assets that is in excess of the cost of supplying distribution transformation or metering. The cost of modifications to the main Distribution System due to the upgraded Connection will be in accordance with Section 2.1.2.

#### **E. Ownership Demarcation Point and Operational Demarcation Point**

For Secondary Services wholly-owned and maintained by Hydro One, the Ownership Demarcation Point and the Operational Demarcation Point shall be located at:

- (i) the top of the Customer's service entrance stack for overhead connections;
- (ii) the line side of the Customer's meter base for underground connections; and
- (iii) the supply connectors on the load side of the CT for a central-metered service, with the exception of the meter base and stack that will be owned and maintained by the customer.

For Secondary Services wholly owned and maintained by the Customer, the Ownership Demarcation Point and the Operational Demarcation Point is the secondary connection at the transformer or the service bus.

Maintenance of the portion of the Secondary Service owned by Hydro One includes repair and like-for-like replacement of a wire or cable that has failed irreparably. The Customer is responsible for all civil work, supports, vegetation and landscaping associated with any such repair or replacement of the portion of Secondary Service owned by Hydro One on the Customer's property.

For Primary Service Residential Customers, the Ownership Demarcation Point shall be located at the line switch or primary live line clamp.

When a Hydro One owned transformer is installed on a customer owned pole or customer supplied transformer pad the grounding system shall be transferred to Hydro One prior to energization.

Where the Customer has ownership of a primary disconnecting device, this device shall be the Operational Demarcation Point, which shall be under the operating control of Hydro One.

#### **F. Customer-Supplied Secondary Wire**

The Customer shall install, own, and maintain the secondary conductor under any of the following conditions:

- (i) conductor terminations are inside the Customer's building;
- (ii) conductor is installed beyond the service entrance;

- (iii) conductor is connected to a Primary Service; or
- (iv) conductor is a non-standard installation.

## **G. Residential and Seasonal Residential Customers**

### **Voltage**

Unless approved by Hydro One, for residential and seasonal residential Customers, the nominal secondary supply voltage shall be 120/240 Volts single-phase.

### **Metering**

To accommodate Hydro One's Meter Installation, the Customer shall make provision as follows:

- (i) Where the rating of a Customer's main disconnecting device does not exceed 200 A, the Customer shall provide a 120/240 V, 200 A, single phase 4-jaw outdoor meter socket connected on the line side of the main disconnecting device.
- (ii) Where the rating of a Customer's main disconnecting device does not exceed 400 A, the Customer shall provide an outdoor combination meter socket and metering transformer enclosure connected on the line side of the main disconnecting device and equipped with:
  - 120/240 V, 10 Amp – 5-jaw meter socket with automatic circuit-closing device (Ex: CT shorting switch); and
  - 400 Amp revenue-metering (Measurement Canada approved) current transformer.

The Meter Installation shall be installed in a location acceptable to Hydro One.

For metering installed on poles, the pole will be installed, owned and maintained by the Customer. The grounding system for the metering shall be transferred to Hydro One prior to energization.

## **H. Residential and Seasonal Residential Three Phase Customers**

### **Voltage**

When approved by Hydro One, for Residential and Seasonal Residential Three Phase Customers, the nominal supply voltage shall be 120/208 volts 4 wire or 347/600 volts 4 wire.

## **Metering**

To accommodate Hydro One's Meter Installation, the Customer shall provide acceptable equipment in accordance with one of the following arrangements, as determined by Hydro One and in a location acceptable to Hydro One:

- (i) 120/208 V, 200 A, 3-phase 7-jaw meter socket connected on the load side of the main disconnecting device; or
- (ii) 347/600 V, 200 A, 3-phase 7-jaw indoor meter socket with an insulated neutral jaw, and connected on the load side of the main disconnecting device.
- (iii) Metering for 347/600 V, 3 phase four wire circuits that only have 1 metering point per service entrance shall use transformer rated metering using 3 CTs and 3 PTs on the load side of the Customer's main disconnect switch. CTs and PTs must be Measurement Canada approved for revenue billing.
- (iv) Metering for 347/600 V, 3 phase four wire circuits that have more than 1 metering point per service entrance may use self-contained metering up to 200 A on the load side of the customer's service entrance, in conformity with the requirements of the Electrical Safety Code.

For metering installed on poles, the pole will be installed, owned and maintained by the Customer. The grounding system for the metering shall be transferred to Hydro One prior to energization.

### **3.2. General Service (Below and Above 50 kW)**

These Rate classifications are applicable to any service that does not fit the description of the year-round residential or seasonal residential classes, or Sub-Transmission (ST), MicroFIT Generator, Distributed Generation customer classes, and Lighting classes. Generally, it is composed of commercial, industrial, educational, administrative, auxiliary and government type services. It includes combination-type services where a variety of uses are made of the service by the owner of one property, and all multiple services except residential with up to four units.

#### **A. General Service**

A General Service customer could be energy billed (less than 50 kW) or demand billed (equal to or greater than 50 kW), depending on average monthly billing demand (See section 2.4.4 Billing, K Annual Monitoring of Electricity Usage).

##### **A.2. General Service, Urban Density UG**

This Rate classification is applicable to General Service Customers who are located in an Urban Density Zone.

### **A.3. General Service, GS**

This Rate classification is applicable to General Service Customers that are not located in an Urban Density Zone.

### **B. Unmetered Connections**

See Section 3.8

### **C. Connection and Upgrade Charges**

A General Service Customer who makes a written request for a Connection and whose building lies along Hydro One's existing distribution lines shall pay Hydro One Connection charges in accordance with Section 2.1.1.

A General Service Customer who makes a written request for a Connection and whose building is within Hydro One's service area shall pay Connection charges in accordance with Section 2.1.2.

A General Service Customer who requests an upgrade in connection assets at its premises shall pay Hydro One the net cost of upgrading the connection assets that is in excess of the cost of supplying distribution transformation or metering. When modifications to the Distribution System are required due to the upgraded Connection, the cost will be in accordance with Section 2.1.2.

A General Service Customer who supplies their own transformer (in excess of 500 kVA) via a service upgrade at its premises, shall pay Hydro One the net cost of upgrading the connection assets that is in excess of the cost of supplying metering. When modifications to the Distribution System are required due to the upgraded Connection, the cost will be in accordance with Section 2.1.2

If by completing this upgrade the General Service Customer believes they are eligible for the Sub-Transmission Rate Class, a load forecast and rate change will be considered when the General Service Customer submits a request for a rate change. Without a formal request, a rate change will only occur once the account has been assessed by the Annual Demand Monitoring program, thus waiting at a minimum a full calendar year before changing rate classes.

### **D. Ownership Demarcation Point and Operational Demarcation Point**

For Secondary Service General Service Customers, the Ownership Demarcation Point and Operational Demarcation Point shall be located as follows:

- (i) where the Customer's conductors emerge from the service head or mast on overhead Secondary Services, or at the secondary terminal (spade) of the transformer, or at the secondary connection pedestal located at the property line, as determined by Hydro One at the Customer's location; or

- (ii) on underground Secondary Services, at the secondary terminal (spade) of the transformer.

For Primary Service General Service Customers, the Ownership Demarcation Point shall be located at the primary live line clamp or line switch.

When a Hydro One owned transformer is installed on a customer owned pole or customer supplied transformer pad the grounding system shall be transferred to Hydro One prior to energization.

Where the Customer has ownership of a primary disconnecting device, this device shall be the Operational Demarcation Point, which shall be under the operating control of Hydro One.

## **E. Voltage**

For Secondary Service General Service Customers, Hydro One supplies electricity at the following nominal voltages and phases, where available:

- (i) 347/600Y Volts 3-phase 4 wire;
- (ii) 120/208Y Volts 3 phase 4 wire; or
- (iii) 120/240 Volts 1-phase.

The Customer shall consult with Hydro One early to confirm availability of specific voltages within the Hydro One Distribution System.

For Primary Service General Service Customers, Hydro One supplies electricity at the following nominal voltages and phases, where available:

- (i) 44,000 Volts – 3 Phase 3 Wire;
- (ii) 16,000/27,600 Volts – 3 Phase 4 Wire;
- (iii) 14,400/25,000 Volts – 3 Phase 4 Wire;
- (iv) 8,000/13,800 Volts – 3 Phase 4 Wire;
- (v) 7,200/12,470 Volts – 3 Phase 4 Wire;
- (vi) 4,800/8,320 Volts – 3 Phase 4 Wire; or
- (vii) 2,400/4,160 Volts – 3 Phase 4 Wire

## **F. Metering**

### **Metering Equipment**

For metering installed on poles, the pole will be installed, owned and maintained by the Customer. The grounding system for the metering shall be transferred to Hydro One prior to energization.

To accommodate Hydro One's Meter Installation, the Customer shall provide acceptable equipment and in a location acceptable to Hydro One in accordance with one of the following arrangements, as determined by Hydro One:

### **Self-Contained Metering Up to 200 A**

A self-contained Meter Installation at one of the three secondary voltages in section F where the rating of the Customer's main disconnecting device shall include one of the following:

- (i) 120/240 V, 200 A, 1-phase 4-jaw outdoor socket-base meter connected on the line side of the main disconnecting device;
- (ii) 120/208V, 200 A, 1-phase 5-jaw indoor socket-base meter (network) connected on the load side of the main disconnecting device;
- (iii) 120/208 V, 200 A, 3-phase 7-jaw socket base meter connected on load side of the main disconnecting device; or
- (iv) 347/600V, 200 A, 3-phase 7-jaw indoor socket base meter connected on the load side of the main disconnecting device; and
- (v) metering of any 3-phase secondary voltages other than those specified shall use transformer rated metering.

### **120/240 V, 400 A**

A General Service single-phase transformer-type Meter Installation at 120/240 V where the rating of the Customer's main disconnecting device ranges from greater than 200A up to 400 A shall be provided with:

- (i) 120/240 V, 10 A, 5-jaw meter socket connected on the line side of the main disconnecting device with an automatic circuit-closing device (CT shorting switch);
- (ii) indoor instrument transformer enclosure; and
- (iii) 19 mm conduit from the instrument transformer enclosure to the meter socket.

### **Three-Phase Less than or Equal to 200 kW**

A three-phase transformer-type Meter Installation that is not equipped with interval meters and where the monthly average peak demand during a calendar year is forecasted by Hydro One not to exceed 200 kW shall be provided with:

- (i) an acceptable outdoor meter enclosure;
- (ii) an indoor instrument transformer enclosure; and
- (iii) 31 mm conduit from the instrument transformer enclosure to the meter enclosure.

### **Three-Phase Greater than 200 kW**

A transformer-type Meter Installation where the monthly average peak demand during a calendar year is forecasted by Hydro One to exceed 200 kW and where the rating of the Customer's main disconnecting device does not exceed 3000 A at low voltage shall have an interval meter and shall be provided with:

- (i) an acceptable meter enclosure;
- (ii) an indoor instrument transformer enclosure;
- (iii) 31 mm of conduit from the instrument transformer enclosure to the meter enclosure; and
- (iv) when requested by Hydro One, a voice grade direct access telephone line that is active 24 hours every day, seven days per week, and protected by a 13 mm conduit from the telephone entrance equipment into the meter enclosure.

### **Instrument Transformer Enclosure**

A Customer who requires a transformer-type Meter Installation shall provide a metal instrument transformer enclosure that is:

- (i) equipped with a hinged door or doors, provision for securing of the instrument transformers in the enclosure, and padlock hasp or other means of rendering the enclosure inaccessible to unauthorized persons;
- (ii) connected on the load side of the main disconnecting device;
- (iii) sized as follows:
  - 120/240 Volts single phase service: Over 200 Amperes up to and including 400 Amperes - 1.0 m x 1.0 m x 0.3 m (36" x 36" x 12"); Over 400 Amperes - 1.2 m x 1.2m x 0.3m (48" x 48" x 12")
  - 120/208 Volts three phase four wire service: Over 200 Amperes up to and including 600 Amperes - 1.2 m x 1.2 m x 0.3 m (48" x 48" x 12")
  - 347/600 Volts three phase four wire service: Over 200 Amperes up to and including 600 Amperes - 1.2 m x 1.2 m x 0.3 m (48" x 48" x 12")

Where a cabinet is required for meters only, the dimensions will be 0.61 m x 0.412 m x 0.257 m (24" x 16.2" x 10.1")

  - 347/600 Volts, 3 phase four wire circuits that only have 1 metering point per service entrance shall use transformer rated metering using 3 CTs and 3 PTs; and
- (iv) provided with one of the following meter loop arrangements - Spare conductors not less than 450 mm in length, equipped with connectors supplied and terminated by the Customer at each bar-type current transformer connection point, or three-phase conductors installed through ring-type current transformers, or other acceptable provision for connection of current transformers.

### **Multi-Occupancy Metering**

The Meter Installation for a multiple occupancy structure where the Customer requires individual meters and where the rating of the main disconnecting device exceeds 400 A shall satisfy the following requirements:

- (i) Meters shall be installed in a central service room with access as per Section 1.7.1 Space and access.
- (ii) The central service room shall be separated from the remainder of the building by an approved fire separation.
- (iii) Any splitter trough cover shall be hinged to open downward and equipped with provision for padlock and seal.
- (iv) A full-sized neutral supply conductor shall be extended from any splitter trough to each meter socket.
- (v) The conductors to each meter shall be provided with a separate sub-service box.
- (vi) Sub-service boxes shall be identified with an approved address or unit number and the same number shall identify the service panel inside the unit.
- (vii) Metering for 347/600 V, 3 phase four wire circuits that have more than 1 metering point per service entrance may use self-contained metering up to 200A on the load side of the Customer's service entrance in conformity with the requirements of the Electrical Safety Code.

### **3.3. General Service**

In the Distribution System Code Appendix A, section 3.2 is General Service Below 50 kW, and section 3.3 is General Service Above 50 kW. However, in this Conditions of Service document, these two sections are combined into section 3.2 above.

### **3.4. Sub-Transmission (ST)**

This Rate Classification is applicable to:

- (i) Local Distribution Companies (LDC) receiving supply from Hydro One Distribution assets, where Hydro One is the Host Distributor to the LDC,  
or
- (ii) customers taking load which:
  - (a) is three-phase;
  - (b) is greater than 500 kW (monthly measured maximum demand averaged over the most recent calendar year, or whose forecasted monthly average demand over twelve consecutive months is greater than 500 kW),
  - (c) directly connected to and supplied from Hydro One Distribution assets between 44 kV and 13.8 kV inclusive,



- (d) Hydro One Networks has no responsibility for local transformation; customer provides their own transformation.

Customers formerly classified as Direct Customers are included in this rate class if they meet the above criteria.

For the purpose of rate reclassification please refer to Section 2.4.4 Billing, Annual Monitoring of Electricity Usage.

#### **A. Connection and Upgrade Charges**

A Sub-Transmission Customer who makes a written request for a Connection and whose building lies along Hydro One's existing distribution lines shall pay Hydro One Connection charges in accordance with Section 2.1.1.

A Sub-Transmission Customer who makes a written request for a Connection and whose building is within Hydro One's service area shall pay Connection charges in accordance with Section 2.1.2.

A Sub-Transmission Customer who submits a written request for a service upgrade may be required to enter into a Capital Cost Recovery Agreement with Hydro One. The cost of modifications to the Distribution System, due to the upgraded Connection, will be in accordance with Section 2.1.2.

#### **B. Ownership Demarcation Point and Operational Demarcation Point**

For Sub-Transmission Customers, excluding Embedded Distributors, the Ownership Demarcation Point shall be:

- (i) located at the line switch or primary live line clamp; or
- (ii) where the Customer has ownership of a primary disconnecting device, this device shall be the Operational Demarcation Point, which shall be under the operating control of Hydro One; or
- (iii) as specified in the Connection Agreement; or
- (iv) for Customers not covered by the above cases (such as customers, excluding Embedded Distributors and Generators, who also were moved into the Sub-transmission rate class from another rate class), the Ownership Demarcation Point and Operational Demarcation Point shall be the first operating device along the tap to the Customer, providing that the first operating device is less than 200M from the line tap and does not cross a third party's property or an ownership demarcation point will be installed at Hydro One's cost as close as reasonably possible to the property line and if necessary an Operational Demarcation Point will be installed to meet ESA requirements by the customer; or
- (v) if there is no operating device, an operational device will be installed at Hydro One's cost as close as reasonably possible to the Ownership Demarcation Point (property line) or the Demarcation

Point that the Customer may have supported by agreements with a third party.

For Sub-Transmission Customers who are Embedded Distributors, see the Embedded Distributor section 3.7.

### **C. Voltage**

The Customer shall consult with Hydro One early to confirm availability of specific voltages within the Hydro One Distribution System.

For Sub-Transmission Customers, Hydro One supplies 3 phase electricity at the following nominal phase-to-phase voltages, where available:

- (i) 44,000 Volts – 3 Phase 3 Wire;
- (ii) 27,600 Volts – 3 Phase 4 Wire;
- (iii) 25,000 Volts – 3 Phase 4 Wire; or
- (iv) 13,800 Volts – 3 Phase 4 Wire.

In some cases, Hydro One supplies electricity at below 13,800 Volts to Embedded Distributors.

### **D. Metering**

For Sub-Transmission Customers, the Meter Installation shall be as specified below or in the Connection Agreement.

A transformer-type Meter Installation where the monthly average peak demand during a calendar year is forecasted by Hydro One to exceed 500 kW and where the rating of the Customer's main disconnecting device does not exceed 3000 A at low voltage shall have an interval meter and shall be provided with:

- (i) an acceptable meter enclosure;
- (ii) an indoor instrument transformer enclosure if secondary metered;
- (iii) a 31 mm conduit from the instrument transformer enclosure to the meter enclosure; and
- (iv) when requested by Hydro One, a voice grade direct access telephone line that is active 24 hours every day, seven days per week, and protected by a 13 mm conduit from the telephone entrance equipment into the meter enclosure.

Primary metering requirements shall be determined by Hydro One on an individual basis.

### **3.5. Embedded Generation Facilities**

An Embedded Generator is solely responsible for all commercial arrangements it may have or wish to have with the Ontario Power Authority (“OPA”) with respect to its Embedded Generation Facility, including, the contract application process and the administration of their contract with the OPA.

Embedded Generators shall ensure that their Embedded Generation Facility meets the technical requirements specified in Appendix F.2 of the Distribution System Code, the requirements of the Electrical Safety Code and the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically. .

If there is a conflict between the Technical Interconnection Requirements and:

- (i) these Conditions of Service, the Technical Interconnection Requirements shall take precedence; and
- (ii) the technical requirements specified in Appendix F.2 of the Distribution System Code, the technical requirements specified in Appendix F.2 of the Distribution System Code shall take precedence.

For greater certainty, Embedded Generation Facility also includes a Net Metered Generation Facility.

#### **A. Technical Requirements - Equipment Deemed Compliant**

All Embedded Generation Facility equipment connected and operating before May 1, 2002, is deemed to be in compliance with all relevant technical requirements. The Embedded Generator remains responsible for ensuring compliance with the Electrical Safety Code and the requirement to have an isolating device as identified in subsection C.2 below.

Hydro One may require that the Embedded Generator bring the equipment deemed compliant above into actual compliance with all relevant technical requirements, including, the technical requirements specified in Appendix F.2 of the Distribution System Code, within a specific reasonable time period specified by Hydro One, but not to exceed 12 months, where, in Hydro One’s sole opinion, there is:

- (i) a material deterioration of the reliability of the Distribution System resulting from the performance of the Generator’s equipment;
- (ii) 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

- (iii) a material increase in generator capacity at the site where the equipment deemed compliant is located.

**B. Size Categories**

The Distribution System Code places Embedded Generation Facilities into different categories based on their name-plated rated capacity. The categories are outlined below:

| <b>Embedded Generation Facility Classification</b>                   | <b>Name-plate Rated Capacity</b>  |
|--|---|
| <b>Micro-Embedded Generation Facility</b>                            | 10 kW or less   |
| <b>Capacity Allocation Exempt Small Embedded Generation Facility</b> | (a) 250 kW or less connected to a less than 15 kV line; and<br>(b) 500 kW or less connected to a 15 kV or greater line;<br>(c) does not include a Micro-Embedded Generation Facility. |
| <b>Small Embedded Generation Facility</b>                            | (a) 500 kW or less connected to a less than 15 kV line; and<br>(b) 1 MW or less connected to a 15 kV or greater line;<br>(c) does not include a Micro-Embedded Generation Facility.   |
| <b>Mid-sized Embedded Generation Facility</b>                        | Name-plate rated capacity of 10 MW or less and:<br>(a) more than 500 kW connected to a less than 15 kV line; and<br>(b) more than 1 MW connected to a 15 kV or greater line.          |
| <b>Large Embedded Generation Facility</b>                            | Greater than 10 MW  |

## C. Connection Process

This Section 3.5C does not apply to Emergency Backup Generation Facilities, Energy Storage Facilities, and to Load Displacement Generation Facilities. The process to be followed with respect to Emergency Backup Generation Facilities and Load Displacement Generation Facilities can be found in Section 2.3.6 of these Conditions of Service.

The process and time line associated with the connection of a Generation Facility of any size to the Distribution System can be found on Hydro One's Website and in the Distribution System Code available on the Ontario Energy Board web site ([www.ontarioenergyboard.ca](http://www.ontarioenergyboard.ca)). Embedded Generators are responsible for fulfilling their obligations (including for example, making payments for impact assessments, the execution of connection cost agreements, or remedying a default of any terms of a connection cost agreement, etc.) in a timely manner. This will enable Hydro One to meet its responsibilities as a distributor specified in the Distribution System Code. The "clock" for Hydro One's specific timelines begins only after Hydro One receives all information from the Generator that Hydro One requires in order to perform its obligations. Failure of the Embedded Generator to meet their obligations within the timelines specified by Hydro One could result in processing delays, or more critically, the removal of the Embedded Generator's capacity allocation, in accordance with Section 6.2.4.1e of the Distribution System Code.

As of the date of these Conditions of Service, Hydro One has requested from the Ontario Energy Board exemptions from two Distribution System Code requirements (sections 6.2.6 and 6.2.7) respecting the connection of Micro-embedded Generation Facilities, and specifically pertaining to:

- (i) the timelines for providing an Offer to Connect or reasons for refusing to connect the proposed generation facility;
- (ii) the timeline to connect a Micro-embedded Generation Facility.

The application and Hydro One's request may be viewed at the Ontario Energy Board or its website ([www.OntarioEnergyBoard.ca](http://www.OntarioEnergyBoard.ca)) under docket number EB-2011-0118.

Hydro One may or may not receive the Ontario Energy Board's approval of these exemptions and will abide by the Decision obtained.

All proposed Embedded Generation Facilities regardless of size will undergo an assessment process to ensure there are no system constraints and that capacity is available. Hydro One may, at its sole discretion, refuse to connect an Embedded Generation Facility for any of the reasons provided in Section 3.1.1 of the Distribution System Code or Section 2.1.3 of these Conditions of Service. If Hydro One has refused to connect a proposed Embedded Generation Facility for reasons:

- (i) that are within the control of the Generator, the proposed Embedded Generation Facility will not be re-assessed unless the Generator makes another application to connect which addresses Hydro One's reasons for refusing to connect the Embedded Generation Facility to Hydro One's satisfaction; and
- (ii) that are not within the control of the Generator, including, lack of capacity and system constraints, should capacity become available in the future or the system condition be remedied subsequent to Hydro One's refusal to connect, Hydro One will not re-assess the proposed Embedded Generation Facility unless the Generator makes another application to connect.

The following are some of the steps and conditions required to be met for the Connection of an Embedded Generation Facility to the Distribution System. More detailed information can be found on Hydro One's website <http://www.HydroOne.com>.

### **C.1 Connection Impact Assessment (CIA) and Documentation Requirements**

All Generators shall provide Hydro One with the documentation requested by Hydro One including any information specified in the Technical Interconnection Requirements. .

Hydro One performs a Connection Impact Assessment ("CIA") for any Embedded Generation Facility with a name-plate rated capacity greater than 10 kW, or for any Embedded Generation Facility 10 kW or less when deemed required by Hydro One, in order to assess the impact of the connection of the proposed Embedded Generation Facility to Hydro One's distribution system and where connection is feasible, to specify the connection requirements. Capacity will be allocated for the Embedded Generation Facility upon the completion of the CIA in accordance with the Distribution System Code. The cost of performing the CIA will be paid by the Generator, at the applicable OEB-approved rates.

If the Embedded Generator changes the Embedded Generation Facility's design, plans or equipment materially from that in the original application for connection, Hydro One is obligated to follow the treatment prescribed in Section 6.2.15 of the Distribution System Code.

### **C.2 Interface Protection and Isolating Devices**

The Embedded Generator shall provide an interface protection for their Embedded Generation Facility that detects all applicable faults on the Hydro One distribution system for the purposes of the Embedded Generator disconnecting the Embedded Generation Facility from the Distribution System in the event of such faults. The Embedded Generator shall provide, install and maintain a

disconnecting device at the Point of Common Coupling with the Distribution System or some other acceptable location to Hydro One for the purpose of isolating the Embedded Generation Facility in case of an Emergency and for work protection. The disconnecting device shall be installed in accordance with the technical requirements specified in Appendix F.2 of the Distribution System Code, the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically, and the Electrical Safety Code.

### **C.3 Metering for Embedded Generation Facilities**

#### **Metering Installations for Micro-embedded Generation Facilities**

The Embedded Generator is responsible for providing a Meter Installation for its Micro-embedded Generation Facility in accordance with the requirements of the Distribution System Code, Hydro One's standard metering requirements and Hydro One's policy directive for Embedded Generation Facility metering (AMPD-041 located at [www.HydroOne.com](http://www.HydroOne.com)). Hydro One shall supply and install the revenue meter. All costs associated with new or modified metering are the responsibility of the Embedded Generator.

#### **Metering for Embedded Generation Facilities Larger than 10 kW**

##### **a) Metering Installations – Installed after July 14, 2000**

The Embedded Generator is responsible for providing a Meter Installation in accordance with the requirements of the Distribution System Code, Hydro One's standard metering requirements and Hydro One's policy directive for Embedded Generation Facility metering (AMPD-041 located at [www.HydroOne.com](http://www.HydroOne.com)). Prior to installing the Meter Installation, the Embedded Generator shall provide Hydro One with the technical details of the Meter Installation, for Hydro One's approval. All costs associated with new or modified metering are the responsibility of the Embedded Generator.

The Meter Installation shall be installed at the Point of Common Coupling with the Distribution System or some other acceptable location at the sole discretion of Hydro One. If the Meter Installation is not installed at the Point of Common Coupling, Hydro One shall apply loss factors to the output of the Embedded Generation Facility in accordance with the OEB-approved loss factors applied for retail settlements and billing.

The Embedded Generator shall supply single line diagrams showing revenue metering connections in the format specified by Hydro One. Such diagrams must be signed and stamped by a professional engineer registered in Ontario. The loss factors, if required, must be supplied by the Embedded Generator in the format specified by Hydro One and signed and stamped by a professional engineer registered in the province of Ontario.

In all cases where the Generator is responsible for any Meter Installation, the Generator is also responsible for the quality of the equipment and installation including all work and materials related to the Meter Installation. Deficiencies in any Meter Installation that require remediation, as determined by Hydro One, including but not limited to replacement costs and labour, will be performed by Hydro One at the cost of the Generator. The Generator shall be responsible to Hydro One for Meter Installation deficiencies for a period of two (2) years after Hydro One becomes the owner of the Meter Installation.

**b) Metering Installations – Installed Prior to July 14, 2000**

Where the existing Meter Installation for an Embedded Generation Facility was installed prior to July 14, 2000, the Embedded Generator shall upgrade the Meter Installation to be in accordance with Hydro One’s standard metering requirements and Hydro One’s policy directive for Embedded Generation Facility metering (AMPD-041 located at [www.HydroOne.com](http://www.HydroOne.com)) by no later than the meter seal expiry date. All costs associated with metering are the responsibility of the Embedded Generator.

**C.4 Transformer Requirements**

**a) Micro-embedded Generation Facilities**

Embedded Generators connecting a Micro-embedded Generation Facility in parallel to a new or existing load service, may use the existing transformer to interface with the distribution system if it is of sufficient size as specified in the appropriate Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically. Embedded Generators connecting Micro-embedded Generation Facilities in a standalone fashion shall pay the Actual Costs for Hydro One to supply, install and maintain the step up transformation. In the case where the connection of the Embedded Generation Facility requires a transformer upgrade to a size over and above the requirements of the load, Hydro One will provide, install, own and maintain the transformer at standard Hydro One voltages. The transformation supplied by Hydro One is dependent on the load of the new or existing load service, is subject to the limitations noted in Section 2.1, and is sized solely upon the new or existing load. All costs associated with the transformer upgrade (including procurement and installation of the new transformer and the decommissioning and removal of the existing transformer) will be at the Embedded Generator’s expense.

**b) Embedded Generation Facilities With a Name-plate Rated Capacity of Greater than 10 KW**

Any Embedded Generator connecting an Embedded Generation Facility with a name-plate rated capacity greater than 10 KW in parallel to a new or existing load service, may use the existing transformer to interface with the distribution system



if it is of sufficient size and provided that the net reverse power flow through the transformer is within the reverse flow limit established by Hydro One. In the case where a connection of the Embedded Generation Facility requires a transformer upgrade to a size over and above the requirements of the load, Hydro One will provide, install, own and maintain the transformer for standard Hydro One voltages to a maximum size of 500 KVA. The transformation supplied by Hydro One is dependent on the load of the new or existing load service, is subject to the limitations noted in Section 2.1, and is sized solely upon the new or existing load. All costs associated with the transformer upgrade (including procurement and installation of the new transformer and the decommissioning and removal of the existing transformer) will be at the Embedded Generator's expense.

Excluding the above, any step-up transformation equipment that is required to step-up the Embedded Generation Facility's output voltage to the primary voltage of Hydro One's distribution line shall be supplied, installed, owned and maintained by the Embedded Generator at their own expense.

## **C.5 Connection Costs**

### **C.5.1 All Embedded Generation Facilities Other than Micro-embedded Generation Facilities**

For all proposed Embedded Generation Facility connections other than Micro-embedded Generation Facilities, an estimate of the cost to connect the Embedded Generation Facility is provided at the time the CIA is completed. The estimate is a "Class C" estimate, which is in the range of plus or minus 50%. The Embedded Generator has the option of requesting that Hydro One perform a detailed cost estimate at the Embedded Generator's expense. The CIA and cost estimate are valid for six months from the date of the CIA release.

All Embedded Generators who wish to connect an Embedded Generation Facility to the Distribution System are required to enter into a Connection Cost Agreement ("CCA") with Hydro One within 6 months of the Embedded Generator receiving a capacity allocation as referenced in Section 3.5.C.1 for the Embedded Generation Facility. The Embedded Generator is also required to pay all required deposits at the time the CCA is executed which will also include, where applicable, any amounts that Hydro One needs to collect from the Embedded Generator to reimburse to third parties as Upstream Transmission Rebates or other rebates upon the connection of the Embedded Generation Facility. Failure to pay the connection cost deposit or other required deposits or to have a signed CCA in relation to the connection of the Embedded Generation Facility within the above-referenced timeline will result in Hydro One being required to remove the Embedded Generator's capacity allocation in accordance with Section 6.2.4.1e) of the Distribution System Code.

The Key provisions of the CCA are described in Appendix "A" to these Conditions of Service.

### **C.5.2 Micro-embedded Generation Facilities**

An Embedded Generator whose proposed Micro-embedded Generation Facility passes Hydro One's assessment will receive an Offer to Connect which includes a cost estimate for the work required to be performed by Hydro One in order for the Micro-embedded Generation Facility to be connected to the distribution system, the appropriate meter, and/or other material and equipment, as required, and any other applicable charges attributable to the proposed facility. As of the date of these Conditions of Service, Hydro One's costs are charged on an Actual Cost basis. The offer to connect and cost estimate will be valid for six months from the date of their issue by Hydro One.

### **C.5.3 Capital Contributions in Respect of Expansions**

An Embedded Generator (including for greater certainty, an Embedded Generator with a Micro-embedded Generation Facility) may be required to pay a capital contribution towards an Expansion in accordance with the process described in Section 2.1.2 of these Conditions of Service. An Embedded Generator who has made such a capital contribution may receive a rebate when an unforecasted customer is added to that Expansion, in accordance with the treatment described in Section 2.1.2 G of these Conditions of Service and Section 3.2 of the Distribution System Code.

### **C.6 Commissioning**

All Embedded Generation Facilities with generation units with a name-plate rated capacity greater than 10 kW are required to successfully go through a series of commissioning tests before final Connection to the Distribution System will be permitted. Hydro One will provide the Embedded Generator with a list of testing requirements applicable to the Embedded Generation Facility. The requirements will be based on a number of factors, including size and type of generator units and type of connection. The Embedded Generator shall complete and confirm the completion of the commissioning testing through the Confirmation of Verification Evidence Report (COVER) process, as established by Hydro One. All costs associated with commissioning are the responsibility of the Embedded Generator.

## **D. Connection Agreement:**

Hydro One requires all Embedded Generators with Embedded Generation Facilities connected to the Distribution System and all Embedded Generators wishing to connect an Embedded Generation Facility to the Distribution System to execute a Connection Agreement in the applicable form prescribed in Appendix "E" of the *Distribution System Code* and/or such other agreements as may be reasonably required by Hydro One in the circumstances as described in Appendix "E" of the *Distribution System Code* as "Other Potential Contracts".

Generators with Embedded Generation Facilities connected to the Distribution System who have not executed a Connection Agreement with Hydro One shall,

subject to any agreement to the contrary between the Generator and Hydro One, execute a Connection Agreement with Hydro One within a reasonable period of time. During the time when such an agreement is not yet in place, the Generator will be deemed to have an implied contract with Hydro One. The terms of the implied contract are embedded in these Conditions of Service, the Electricity Distribution Rate Handbook, Hydro One's Rate schedules, the Licence, the Distribution System Code and the Retail Settlement Code.

In accordance with Section 2.2 of these Conditions of Service, Hydro One may disconnect the Embedded Generation Facility where the Embedded Generator has not executed a Connection Agreement in respect of that Embedded Generation Facility.

#### **E. General Operating Principles, Responsibility for Damages and Consequences of Excess Generation Output**

In addition to meeting the requirements of their Connection Agreements, all Embedded Generators are responsible for operating their Embedded Generation Facilities in a manner which does not materially adversely affect:

- (i) the safety, reliability and efficiency of Hydro One's distribution system, or
- (ii) the quality of distribution services received by existing customers,

in accordance with Sections 3.1.1 and 6.2.25 of the Distribution System Code.

Despite Section 1.9 of these Conditions of Service, if damage to the Distribution System or increased operating costs result from the Connection of an Embedded Generation Facility (other than a Micro-embedded Generation Facility), Hydro One shall be reimbursed for these costs by the Embedded Generator, in accordance with Section 6.2.26 of the Distribution System Code.

The Embedded Generation Facility is not to generate electricity at a capacity greater than the amount allocated to it upon the completion of the Connection Impact Assessment and/or identified in the Connection Agreement. Any excess generation output is subject to review by Hydro One and is a material breach of the Connection Agreement and these Conditions of Service.

#### **F. Maintenance Schedules**

- (i) Embedded Generation Facilities with a name-plate rated capacity greater than 10 kW

An Embedded Generator with an Embedded Generation Facility with a name-plate rated capacity greater than 10 kW must implement and adhere to a regular scheduled maintenance plan to ensure that the Embedded Generation Facility's connection devices, protection and control systems are maintained in good working order. The maintenance plan is outlined in the Connection Agreement or

the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically. The Embedded Generator must conduct a re-verification at least every 48 months (or as specified in the Connection Agreement) and provide a written report to Hydro One signed by professional licensed engineer. A verification report of maintenance activities including, the operation of devices shall be retained by the Embedded Generator and shall be Promptly provided to Hydro One upon request.

Hydro One, in its sole discretion, may require the Embedded Generator to permit Hydro One to witness the re-verification of any of the Embedded Generation Facility's protections that could adversely affect the Distribution System. The Embedded Generator shall pay for the re-verification and provide Hydro One a copy of the report describing the results of the re-verification of the protections in detail.

(ii) Micro-embedded Generation Facilities

The maintenance schedules for a Micro-embedded Generation Facility are outlined in the Connection Agreement and/or in the Technical Interconnection Requirements.

## **G. Reporting Requirements**

Generators with Embedded Generation Facilities connected to Hydro One's distribution system must meet the reporting requirements specified in the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically.

## **H. Post-Connection Changes**

If a Generator proposes to do any one or more of the following with respect to an Embedded Generation Facility that is in service:

- (i) increase the output of the Embedded Generation Facility beyond the capacity allocated to it upon the completion of the Connection Impact Assessment and/or identified in the Connection Agreement;
- (ii) change the mode of operation; or
- (iii) change the protective devices,

The Embedded Generator must make a new application for the proposed change(s) and Hydro One is obligated to follow the process prescribed in sections 6.2.9 through 6.2.24 of the Distribution System Code. This work, including any required impact assessments, will be performed at the Embedded Generator's expense.

## **I. Disconnection of a Generation Facility**

An Embedded Generator shall discontinue the operation of their Embedded Generation Facility and Hydro One may isolate or disconnect the Embedded Generation Facility from the Distribution System, where, in the sole opinion of Hydro One, any of the following conditions, exist:

- (i) there is a material deterioration of the Distribution System reliability resulting from the performance of the Embedded Generation Facility's equipment;
- (ii) there is a material negative impact on the quality of power of an existing or a new Customer resulting from the performance of the Embedded Generation Facility's equipment;
- (iii) the Embedded Generator has failed to re-verify the Embedded Generation Facility's protection and control systems every 48 months or as specified in the Connection Agreement or failed to submit the report to Hydro One within 30 days;
- (iv) the Embedded Generator's report of the re-verification of the Embedded Generation Facility's protection and control systems shows deficiencies that are unacceptable to Hydro One;
- (v) the Embedded Generator has made material changes in the Embedded Generation Facility's capacity and /or mode of operation and/or protective devices without obtaining Hydro One's prior written consent;
- (vi) the Embedded Generation Facility does not meet any one or more of the technical requirements specified in Appendix F.2 of the Distribution System Code or any of those identified in the Technical Interconnection Requirements, including any Hydro One communication of Technical Interconnection Requirements updates in the form of bulletins and/or amendments that may occur periodically,;
- (vii) the Embedded Generator has failed to provide any documentation as specified in the application and assessment process Promptly upon Hydro One's request;
- (viii) the Embedded Generator has failed to provide power quality or equipment status information, or other equipment information as requested by Hydro One in a timely manner and there is a material deterioration of the Distribution System that may be related to the operation of the Embedded Generation Facility; or
- (ix) the Embedded Generator fails to cease generating electricity at a capacity greater than the amount allocated to it upon the completion of the Connection Impact Assessment within 15 days of being notified by Hydro One, in writing, of the excess generation output.
- (x) In the event an Embedded Generation Facility was disconnected for any of the reasons above, reconnection will only be allowed under the conditions outlined in Section 2.2 (E) of these Conditions of Service.

**J. Default Cure Periods - Form of Connection Agreement for Small Embedded Generation Facility or a Mid-sized Embedded Generation Facility**

For the purposes of Section 19.4 of the Form of Connection Agreement for Small Embedded Generation Facility or a Mid-sized Embedded Generation Facility, the cure periods for a Default as that term is defined in such Connection Agreement) are as follows:

- i) The Cure Period for a Financial Default shall be ten business days from the date that Hydro One provides the Embedded Generator with written notice of the Financial Default.
- ii) The Cure Period for a Non-financial Default shall depend on the impact of the Non-financial Default, determined by Hydro One as follows:

| <b>Impact of Default</b>  | <b>Description</b>  | <b>Cure Period</b> |
|---------------------------|---|--------------------|
| Safety - Immediate        | A Non-financial Default that could result in immediate injury or loss of life (e.g., exposed wires, destroyed station fence, etc.).   | Promptly           |
| Safety - Potential        | A Non-financial Default that could result in injury or loss of life if a single contingency were to occur (e.g., substandard grounding).  | Promptly           |
| Asset Integrity           | A Non-financial Default that could adversely affect the ability of an asset to operate within prescribed ratings (voltage, thermal, short circuit) or be maintained to required standards for the purpose of prolonging the lifespan of the asset or satisfying safety or environmental requirements.   | Promptly           |
| Environment - Immediate   | A Non-financial Default that could result in immediate adverse effects on land, air, water, plants, or animals.   | Promptly           |
| Environmental - Potential | A Non-financial Default that could, if a single contingency were to occur, result in adverse effects on land, air, water, plants, or animals.   | 30 days            |
| Power Quality Immediate   | A Non-financial Default that results in a materially adverse effect on the quality of distribution services received by other customers, and which adverse effect results in a variation in electric power service that is likely to cause the failure or improper or defective operation of end-use equipment, such as voltage sag, overvoltage, transients, | Promptly           |

|                         |   |         |
|-------------------------|---|---------|
|                         | harmonic distortion and electrical noise.   |         |
| Power Quality Potential | A Non-financial Default that could result in an adverse effect on the quality of distribution services received by other customers, and which adverse effect could result in a variation in electric power service that is seen to be objectionable by other customers and could cause the failure or improper or defective operation of end-use equipment, such as voltage sag, overvoltage, other transient events, harmonic distortion and electrical noise. | 30 days |

Where a Non-financial Default can have more than one impact and the impacts have different Cure Periods, the shortest of the Cure Periods shall apply. Unless Hydro One is found at fault, the cost of any remedial work is to be performed at the Embedded Generator's expense.

## **K. Rates and Settlement**

### **K.1 MicroFIT Generator Rate Classification**

The MicroFIT Generator Rate Classification is a separate Rate classification and tariff that applies to Embedded Generation Facilities within the MicroFIT program. This classification applies only to an Embedded Generator who has entered into a MicroFIT contract with the Ontario Power Authority in respect of a Micro-embedded Generation Facility.

### **K.2 Distributed Generation Rate Classification**

Any Embedded Generation Facility with a name-plate rated capacity that is greater than 10 kW, or, that is not classified in the MicroFIT Generator Rate Classification, will have a rate classification of Distributed Generation.

This rate classification is applicable to associated load needed to generate, for example for station service, and only when the Embedded Generation Facility and the associated load are supplied through a single point of connection to the Distribution System.

This classification is not applicable to a Load Displacement Generation Facility.

### **K.3 Distributors right to deduct**

Power purchase payments to Generators will be made by Hydro One as required by the Retail Settlement Code. Hydro One shall have the right to deduct any

amounts owing to Hydro One by the Generator, including, but not limited to charges for Standard Supply Service, from the power purchase payments payable by Hydro One to the Generator.

#### **K.4 Electronic Funds Transfer (EFT)**

Payments for power purchases will only be made via electronic funds transfer in Canadian funds to a Canadian banking institution. All payments shall be made payable to the Generator unless a written direction of funds is received from the Generator instructing otherwise.

### **3.6. Embedded Wholesale Market Participant**

An Embedded Wholesale Market Participant is a Customer who is registered as a Wholesale Market Participant with the IESO and whose facility is not directly connected to the IESO Controlled Grid but is connected to the Distribution System. All Embedded Wholesale Market Participants within the service jurisdiction of Hydro One, once approved by the IESO, shall inform Hydro One in writing of their approved status 60 days prior to their participation in the IESO-administered market.

A Connection Agreement, including an operating schedule, will be required between an Embedded Wholesale Market Participant and Hydro One.

An Embedded Wholesale Market Participant will be responsible for the ownership, installation and maintenance of the meter and contracting the services of a Registered Meter Service Provider.

### **3.7. Embedded Distributor**

The reliability of supply and the voltage level at the Delivery Point from the Distribution System to an Embedded Distributor's distribution system shall be as good as or better than what is provided to Hydro One's other distribution Customers.

Hydro One will make every reasonable effort to respond promptly to an Embedded Distributor's written request for a Connection to the Distribution System and shall comply with all of the requirements of Connection as identified in section 6.3 of the Distribution System Code.

#### **A. General Information Requirements**

The Embedded Distributor shall provide load forecasts or any other information related to the Embedded Distributor's system to Hydro One, as determined and required by Hydro One. Hydro One shall not require any information from another Distributor unless it is required for the safe and reliable operation of either the Distribution System or Transmission System or in order for Hydro One to meet its obligations under any Applicable Laws or its Licences.



## **B. Connection and Upgrade Charges**

As of May 21, 2013, the following cost responsibility principles shall apply to load connections of Embedded Distributors, including, but not limited to:

- new Distribution Facilities required to meet an Embedded Distributor's supply capacity needs;
- upgrades to existing Distribution Facilities required to meet an Embedded Distributor's supply capacity needs; and
- system enhancements required to meet an Embedded Distributor's power quality and/or system reliability needs, independent of any supply capacity requirements.

The following cost responsibility principles will not apply to any facilities, upgrades and enhancements which were identified and included in Hydro One's approved rate base prior to May 21, 2013.

### **B1. Need for Supply Capacity**

When it is identified that the Total Normal Supply Capacity of a Distribution Facility has been reached, Hydro One will inform all Embedded Distributors served by that facility that the Total Normal Supply Capacity has been reached.

Hydro One will request each Embedded Distributor served by the Distribution Facilities to indicate if the Embedded Distributor anticipates the need for additional capacity and, if so, to provide a load forecast for each supply point on the Distribution System that serves that Embedded Distributor.

- For each Embedded Distributor that notifies Hydro One, in writing, of its need for additional capacity, Hydro One will, in consultation with that Embedded Distributor, identify the preferred option for meeting the additional capacity requirement, in accordance with the cost responsibility provisions set out in this section 3.7 B.
- Where an Embedded Distributor does not notify Hydro One, in writing, of its need for additional capacity, the Embedded Distributor's capacity entitlement at each of its supply points on the Distribution System shall be capped at the Embedded Distributor's Historical Capacity at that particular supply point.

### **B2. New Facility for Capacity**

Where a new Distribution Facility is required to meet the supply capacity needs of an Embedded Distributor, Hydro One shall require a capital contribution from the Embedded Distributor to cover the cost of the new facility, as determined using the economic evaluation methodology set out in

Appendix B of the Distribution System Code. A capital contribution may only be required to the extent that the cost of the new facility is not recoverable in distribution rate revenues. To that end, Hydro One shall include in the economic evaluation the relevant annual distribution rate revenues over the applicable economic evaluation period that are derived from that part of the distributor's new load that exceeds the Total Normal Supply Capacity of the existing Distribution Facilities already serving the distributor and that will be served by the new Distribution Facility.

### **B3. Upgrade for Capacity**

Where an upgrade to an existing Distribution Facility is needed to meet the supply capacity needs of an Embedded Distributor, Hydro One shall require a capital contribution from the distributor to cover the cost of the upgrade, as determined using the economic evaluation methodology set out in Appendix B of the Distribution System Code. A capital contribution may only be required to the extent that the cost of the upgrade is not recoverable in distribution rate revenues from the distributor. To that end, Hydro One shall include in the economic evaluation the relevant annual distribution rate revenues over the applicable economic evaluation period that are derived from that part of the Embedded Distributor's new load that exceeds the total normal supply capacity of the existing Distribution Facilities already serving the Embedded Distributor and that will be served by the upgraded Distribution Facility.

### **B4. Non-Capacity System Enhancement**

Where a new Distribution Facility or an upgrade to an existing Distribution Facility is needed to meet the system enhancement (i.e. power quality and/or system reliability) needs of an Embedded Distributor, and such needs are not also associated with the supply capacity needs of that Embedded Distributor, Hydro One shall require a capital contribution from that Embedded Distributor to cover the cost of the new facility or upgrade without using the economic evaluation methodology set out in Appendix B of the Distribution System Code.

### **B5. Single Embedded Distributor**

For a single Embedded Distributor, Hydro One shall attribute to that distributor the cost of any new Hydro One-owned Distribution Facility or any upgrade to an existing Hydro One-owned Distribution Facility that is required to serve that part of the Embedded Distributor's new load that exceeds the Total Normal Supply Capacity of any Distribution Facility already serving that distributor, as reasonably projected by the load forecast provided by the Embedded Distributor or by such modified load forecast as may be agreed to by the Embedded Distributor and Hydro One.

Where Hydro One determines that a new Distribution Facility (as described in section B.2 above) or an upgrade to an existing Distribution Facility (as described in section B.3 above) that is required to meet an Embedded Distributor's supply capacity needs will also meet Hydro One's supply capacity or system enhancement needs, the cost attribution methodology in section B.6 (Multiple Embedded Distributors) shall be used to apportion the cost between Hydro One and the Embedded Distributor.

Where Hydro One determines that a non-capacity system enhancement (as described in section B.4 above) that is needed to meet an Embedded Distributor's needs will also meet Hydro One's supply capacity or system enhancement needs, the cost of the non-capacity enhancement shall be shared based on Hydro One's and the Embedded Distributor's respective share of the load on the relevant Distribution Facility or, alternatively, based on such other cost-sharing arrangement as may be agreed to by the Embedded Distributor and Hydro One.

#### **B6. Multiple Embedded Distributors**

Where more than one Embedded Distributor triggers the need for a new Distribution Facility or an upgrade to an existing Distribution Facility, Hydro One shall attribute the cost to those Embedded Distributors:

- a) in proportion to their respective non-coincident incremental peak load requirements, as reasonably projected by the load forecast provided by each such Embedded Distributor or by such modified load forecast as may be agreed to by the Embedded Distributors and Hydro One and, in the case of feeders, taking into account the relative length of line used by each Embedded Distributor; or
- b) alternatively, in accordance with any other such methodology as may be agreed to by the Embedded Distributors and Hydro One.

Where Hydro One determines that a new Distribution Facility (as described in section B.2 above) or an upgrade to an existing Distribution Facility (as described in section B.3 above) that is required to meet an Embedded Distributor's supply capacity needs will also meet Hydro One's supply capacity or system enhancement needs, the cost attribution methodology in sub-sections (a) and (b) of this section B.6 shall be used to apportion the cost among the Embedded Distributors and Hydro One.

Where Hydro One determines that a non-capacity system enhancement (as described in section B.4 above) that is needed to meet an Embedded Distributor's needs will also meet Hydro One's supply capacity or system enhancement needs, the cost of the non-capacity system enhancement shall be shared based on Hydro One's and the Embedded Distributors' respective shares of the load on the relevant Distribution Facility or, alternatively, based

on such other cost-sharing arrangement as may be agreed to by the Embedded Distributors and Hydro One.

#### **B7. Upstream Costs**

Where a capital contribution is charged to Hydro One for work performed by a transmitter (including Hydro One's Transmission business unit) or a Host Distributor to meet the needs of an Embedded Distributor, Hydro One shall in turn require a capital contribution from that Embedded Distributor to cover such upstream cost. The upstream cost will be passed through to the Embedded Distributor dollar-for-dollar; Hydro One will not apply the economic evaluation methodology set out in Appendix B of the Distribution System Code to the upstream cost.

Where such upstream cost is associated with a load guarantee, as calculated by the transmitter or host distributor through an economic evaluation, Hydro One shall in turn require the Embedded Distributor to be subject to a corresponding load guarantee. Hydro One shall require the Embedded Distributor to pay any upstream true-up costs that may result from the distributor's subsequent load shortfall in relation to the Embedded Distributor's load guarantee.

#### **B8. Capital Cost Recovery Agreement**

Terms and conditions addressing the arrangements described in this section B between Hydro One and Embedded Distributors shall be incorporated in a Capital Cost Recovery Agreement (CCRA). Where multiple Embedded Distributors are involved, Hydro One will normally enter into a separate CCRA with each Embedded Distributor. Hydro One will not commence work on any new Distribution Facility or on any upgrades to existing Distribution Facilities until a CCRA is fully executed between Hydro One and the Embedded Distributor or in the event that multiple Embedded Distributors are involved, until a CCRA has been executed with each of the Embedded Distributors, and all required payments have been made in accordance with the CCRA(s).

#### **C. Ownership Demarcation Point and Operational Demarcation Point**

For an Embedded Distributor, the Ownership Demarcation Point and the Operational Demarcation Point shall be specified in the Operating Schedule of the Connection Agreement.

#### **D. Voltage**

The Embedded Distributor shall consult with Hydro One early to confirm availability of specific voltages within the Hydro One Distribution System.

For Embedded Distributor, Hydro One supplies electricity at the following nominal voltages and phases, where available:

- (i) 44,000 Volts – 3 Phase 3 Wire;
- (ii) 16,000/27,600 Volts – 3 Phase 4 Wire;
- (iii) 14,400/25,000 Volts – 3 Phase 4 Wire; or
- (iv) 8,000/13,800 Volts – 3 Phase 4 Wire.

## **E. Metering**

For Embedded Distributors, metering shall be specified in the Connection Agreement or as Hydro One shall otherwise specify.

## **F. Embedded Generation Facility Connections**

### **F.1. Application and Information Requirements for Embedded Generation Facility Connections with a Name-plate Rated Capacity > 10 kW**

As the proposed connection of an Embedded Generation Facility with a name-plate rated capacity that is greater than 10 kW to the Embedded Distributor's distribution system impacts Hydro One's Transmission System and Distribution System, an Embedded Distributor shall submit an application to Hydro One in respect of such proposed connection, in a form acceptable to Hydro One, as soon as is practicable and no later than five days after receipt of a complete application for connection. The following information will be required in the application to Hydro One: a description of the proposed Generation Facility, including the type of technology, proposed in-service date, the proposed name-plate rated capacity of the Embedded Generation Facility and the Embedded Distributor's feeder line to which the Embedded Generation Facility is proposing to connect.

Hydro One will make every reasonable effort to respond promptly to an Embedded Distributor's application in respect of the proposed connection of an Embedded Generation Facility with a name-plate rated capacity that is greater than 10 kW to the Embedded Distributor's distribution system and shall comply with all of the requirements of a Host Distributor identified in section 6.2 of the Distribution System Code.

### **F.2. Information Requirements for all Embedded Generation Facility Connections**

The Embedded Distributor shall provide Hydro One with the following information with respect to the connection of Embedded Generation Facilities to the Embedded Distributor's distribution system on a quarterly basis:

- (i) the number of connection impact assessments performed by the Embedded Distributor for Embedded Generation Facilities with a name-plate rated capacity of greater than 10 kilowatts;

- (ii) the amount of name-plate rated capacity of Embedded Generation Facilities connected in the previous quarter, regardless of the size; and
- (iii) the total removal/reduction of previously allocated capacity expressed in kilowatts for Embedded Generation Facilities with a name-plate rated capacity of greater than 10 kilowatts.

Such information is critical to Hydro One's capability to plan for impacts of such connections on its Distribution System and Transmission System in a timely manner. Without this information, Hydro One cannot guarantee the availability of capacity for proposed projects.

Furthermore, the Embedded Distributor is responsible for timely communications with any Embedded Generator proposing to connect an Embedded Generation Facility to the Embedded Distributor's distribution system and for ensuring that Hydro One's requirements are met by the Embedded Distributor and/or the affected Embedded Generator in the case of any issues involving Hydro One.

## **G. Load Capacity on a Distribution Facility**

### **G.1 Total Normal Supply Capacity**

The Total Normal Supply Capacity of a Distribution Facility is equivalent to the maximum amount of load that can be supplied by that facility. The Total Normal Supply Capacity is determined based on equipment electrical ratings, voltage constraints in accordance with CSA standards, and system reliability considerations (e.g. the ability to reliably discriminate between normal and faulted conditions). Each Distribution Facility can be either winter- or summer-critical, as identified by Hydro One.

### **G.2 Historical Capacity**

#### **G.2.1 Determination**

An Embedded Distributor's *Historical Capacity* on a Distribution Facility shall be equal to the Embedded Distributor's highest rolling three-month average non-coincident peak load on the Distribution Facility under normal operating conditions in the most recent five years.

If an Embedded Distributor has been connected to a Distribution Facility for a period of less than five years, for purposes of determining the Embedded Distributor's Historical Capacity, Hydro One shall use the distributor's highest rolling three-month average non-coincident peak load on the Distribution Facility in the year or years during which the Embedded Distributor has been connected to the Distribution Facility.

### **G.2.2 Load Manipulation**

Where Hydro One reasonably believes that an Embedded Distributor is manipulating its load for the purpose of the determination of its Historical Capacity, Hydro One may, at its sole discretion, re-determine the Historical Capacity to eliminate the effects of such manipulation. Hydro One will notify the Embedded Distributor of any adjustments made to its Historical Capacity and provide the rationale for the adjustments.

### **G.2.3 Notification**

Upon written request from an Embedded Distributor, Hydro One will determine the Embedded Distributor's Historical Capacity on a Distribution Facility and provide it to the Embedded Distributor.

## **G.3 Assigned Capacity**

### **G.3.1 Assignment of Available Capacity**

Where unused and unassigned supply capacity is available on an existing Distribution Facility, Hydro One may assign such *Available Capacity* to an Embedded Distributor, upon written request from the Embedded Distributor.

Hydro One shall assign available capacity to an Embedded Distributor, in writing, on a first-come first-served basis. The capacity will be assigned at the sole discretion of Hydro One and will be referred to as the Embedded Distributor's *Assigned Capacity*.

Hydro One will not assign capacity to an Embedded Distributor unless the Embedded Distributor has demonstrated its need for the capacity to the satisfaction of Hydro One.

### **G.3.2 Competing Requests**

Where requests for capacity assignments are received from multiple Embedded Distributors in relation to a Distribution Facility, and the Available Capacity on the facility is insufficient to fully accommodate the requests, Hydro One shall assign the available capacity on that facility to the Embedded Distributors in proportion to their respective demonstrated needs.

### **G.3.3 Cancellation of Assigned Capacity**

Where Available Capacity on a Distribution Facility has been assigned to an Embedded Distributor and that Assigned Capacity has not been taken

up by the Embedded Distributor within one year of the assignment, Hydro One shall

- a) cancel the assignment;
- b) treat such capacity as Available Capacity; and
- c) notify all Embedded Distributors currently requesting capacity at that facility of the cancellation.

An Embedded Distributor may request Hydro One to extend the one-year period referred-to above, where circumstances warrant, such as where a load customer of the Embedded Distributor is constructing a new facility that requires more than one year to come into service.

#### **G.4 Contracted Capacity**

Where a CCRA has been fully executed with an Embedded Distributor in relation to a new or modified Distribution Facility, and the associated economic evaluation is conducted on the basis of a load forecast, the distributor's *Contracted Capacity* shall, during the economic evaluation period to which the economic evaluation relates, be equal to the load identified in that load forecast.

### **3.8. Unmetered Connections**

There are instances where electrical service can be provided without metering to certain Connections that draw a small and uniform electrical load. Hydro One reserves the right to review all cases for eligibility for such unmetered service, and to determine, at its sole discretion, whether to allow an unmetered connection or require that a meter be installed at the Connection.

Services that can be unmetered include cable TV amplifiers, telephone switching devices, phone booths, bus shelters, rail way crossing signals, traffic signals, and other small, uniform or fixed loads. Only loads of less than 5 kW can be set up as unmetered Connections. The unmetered Customer shall provide detailed manufacturer information and documentation with regard to the electrical demand or consumption of the proposed unmetered load. A completed load study that is acceptable to Hydro One may be required for determination of the load and hours of usage.

Unmetered connected service facilities are not intended for Customers with generation facilities to generate and deliver electricity into Hydro One's distribution system. If an unmetered Customer has generation facilities, the connection shall meet Hydro One's technical specification for emergency backup or standby generation, as discussed in section 2.3.6 Emergency Backup Generation Facilities, Load Displacement Generation Facilities and Energy Storage.



### **3.8.1 General Conditions for Unmetered Service Connections**

Hydro One has the fiduciary responsibility to all Customers to ensure that good processes are established and followed. Accordingly there are reciprocal obligations and responsibilities that must be met by both Hydro One and a Customer who wishes to take advantage of less complex supply point equipment associated with an unmetered service connection. Acceptance of an unmetered connected load by Hydro One thus requires Hydro One and the unmetered Customer to uphold the conditions and respective responsibilities listed below.

Further, at Hydro One's discretion, an agreement may be required between the unmetered Customer and Hydro One that identifies the unmetered Customer's obligations and responsibilities in notifying Hydro One of changes to existing or new equipment and of Connections added to the Distribution System by the unmetered Customer.

Where an unmetered Customer wishes to affix its attachments to a Hydro One asset, Hydro One must approve the method of attachment and location of installations and the owner must enter into an additional Customer-specific Joint Use Agreement.

The billing of unmetered Connections will be based on estimated usage.

All unmetered Connections fall under the Unmetered Scattered Load or Lighting Rate classifications.

#### **3.8.1.1 General Responsibilities**

##### **3.8.1.1.1 Unmetered Connected Load Service Customer Responsibilities**

This section lists the unmetered Customer responsibilities which are to:

- comply with the requirements of Hydro One standards and the Ontario Electrical Safety Code to ensure public safety;
- provide a letter on company letterhead, duly signed and stamped by a professional engineer registered with the Professional Engineers of Ontario (PEO), indicating the estimated load of the unmetered connected service;
- retain all information provided to and by Hydro One pursuant to the terms in Section 3.8.3 Data Quality & Audit Requirements and Records Retention. Hydro One may choose not to retain record details with each unmetered connected service and thus will not be held responsible for any incomplete records;
- provide timely and accurate data (refer to Section 3.8.3 Data Quality & Audit Requirements and Records Retention);

- accept energy consumption based on either:
  - the maximum continuous calculated load or
  - the results of a Hydro One accepted audit (See Section 3.8.3 Data Quality & Audit Requirements and Records Retention).
- allow no external party to connect to its unmetered connected service and its unmetered secondary bus;
- relocate, at the unmetered Customer’s cost, the secondary conductors of an unmetered service to another designated Supply Point at Hydro One’s request; and
- complete, sign and submit to Hydro One, a customer self-declaration form and data requirement sheet within 60 days of a request by Hydro One or by any other date specified by Hydro One.

#### 3.8.1.1.2 Hydro One Responsibilities

Hydro One’s responsibilities include the following:

- provide a service layout for each unmetered service location that identifies the Supply Point and prescribes any applicable Hydro One standards and conditions;
- should the Supply Point require relocation, provide reasonable notice to the unmetered Customer, as follows:
  - planned Supply Point relocations – 90 day written notice
  - emergency Supply Point relocations – when possible
- assign the Unmetered Service Load (“USL”) energy account for New Connected load; and
- ensure that unmetered connected service billing information accurately reflects calculated electrical consumption by unit, quantity, load profile and demand. Devices of the same class by type or load may be grouped together where possible and assigned the same billing determinants.

### 3.8.2 Data Requirements

#### 3.8.2.1 New Unmetered Connected Load Services

New unmetered connected load services shall meet with the data quality requirements described in Section 3.8.3 Data Quality & Audit Requirements and Records Retention.

Unmetered Customers shall provide Hydro One with the necessary information to complete each unmetered connected service layout.

### **3.8.2.2 Existing Unmetered Connected Load Services**

Throughout the lifecycle of the unmetered connected service, unmetered Customers are required to submit updated and accurate data to Hydro One when it becomes known by the unmetered Customer, or is requested by Hydro One.

The unmetered Customer shall make an annual declaration confirming data accuracy.

### **3.8.3 Data Quality Auditing Requirements and Records Retention**

In the event that Hydro One or the unmetered Customer identifies or causes a billing error, Hydro One will rectify the matter consistent with this section (3.8.3) and Section 3.8.5.7 Error Costs.

The unmetered Customer shall meet the following data requirements:

#### **3.8.3.1 Data Quality Requirements**

The unmetered Customer shall collect and retain accurate GPS coordinates and provide such to Hydro One when requested.

Electrical profile, power quality, and usage accuracy studies are required when new unmetered equipment is introduced or when these are requested by Hydro One. The unmetered Customer, has two options with which to develop and provide the information to Hydro One:

- an in-house test plan (covering scope, applicability, conditions, quality control, measurement devices, timing, staff competencies, control documents, error resolution process, and external references) for Hydro One approval. Final results and report shall be signed and sealed by a Professional Engineer of Ontario; or
- a signed and sealed certified test report from a Standards Council of Ontario or ANSI compliant laboratory having competencies in electrical equipment testing.

Costs for either option will be borne by the unmetered Customer.

Where data errors are identified, the applicable cost treatment described in Section 3.8.5.7 shall apply.

### **3.8.3.2 Data Auditing Requirements**

Hydro One may initiate an audit at regular intervals or on notice.

### **3.8.3.3 Records Retention**

The unmetered Customer shall retain information provided to and by Hydro One for a minimum period of seven years while the unmetered connected service is in a state other than “permanently removed” (see Section 3.8.5.1 Proposed and Section 3.8.5.2 In-Service and Section 3.8.5.3 Permanently Removed). Once the unmetered connected service has been permanently removed, the retention period shall be a minimum of two years from the removal date.

The retained information shall include the information discussed in this section 3.8 and any other relevant correspondence or agreements regarding the unmetered connected service, including the associated service connections and load.

If the unmetered Customer does not retain such records, Hydro One may incur costs associated with research and reconstruction of the missing information as described in Section 3.8.5.6 Audit Costs and 3.8.5.7 Error Costs. Hydro One reserves the right to recover all of such costs from the unmetered Customer.

## **3.8.4 Unmetered Load Types Defined**

The method of determining, and the location of Supply Points may vary for each unmetered service connection application and shall be established based on consultation with Hydro One. The following sections outline the types of unmetered service connections, each of which has specific requirements captured within each section.

### **3.8.4.1 Street Lighting**

This section pertains to the distribution and supply of electrical energy for street lighting. Street lights are devices owned by or operated for the road authority and/or the municipal corporation.

The energy consumption for street lights is estimated based on Hydro One’s profile for street lighting load, which provides the amount of time each month that the street lights are operating. The energy charge is based on installed load.

Street lighting plant, facilities, or equipment owned by the unmetered Customer are subject to the requirements of the Electrical Safety Authority.

The unmetered Customer is responsible for paying the Actual Cost of the work related to the connection of Street Lighting performed by Hydro One.

Streetlights attached on Hydro One's line poles will require the owner to enter into an agreement to use such poles. The location and method of attachment is subject to Hydro One approval. Hydro One will make the electrical service connection of all streetlights to the Distribution System. The normal service voltage will be 120/240 volts, single-phase, three-wire.

The unmetered Customer will provide the secondary conductor to the supply point. Hydro One will install and connect the service conductor at the supply point.

#### **3.8.4.2 Telecommunication Power Supplies**

This section pertains to the distribution and supply of electrical energy for cablevision power units. The standard service with no accessories (heaters or air conditioners, etc.) can be unmetered. A completed load study will be required; otherwise the account will be set up on full name plate rating. Energy consumption will be based on connected wattage on the line side power supply and based on twenty-four hours of use.

Power units that have additional accessories such as heaters or air conditioners, etc. shall require metering.

Each power supply will be set up as an individual account.

The service voltage will be 120 volts, single phase, two wire, maximum 15 amp.

The method and location of supply will vary and will be established for each application through consultation with Hydro One.

#### **3.8.4.3 Traffic Signals**

This section pertains to the distribution and supply of electrical energy for traffic signals and crosswalks. These are the devices owned and maintained by the road authority and/or the municipal corporation.

The service may be unmetered for small intersections, while larger loads may require metering. Energy consumption will be based on the connected wattage and the calculated hours of use.

The service voltage will be 120/240 volts, single phase, three wire.

The method and location of the supply will vary and will be established for each application through consultation with Hydro One.

The unmetered Customer will provide the secondary conductor to the supply point. Hydro One will install and connect the service conductor at the supply point.

#### **3.8.4.4 Decorative Lighting**

This section pertains to the distribution and supply of electrical energy for decorative street lighting installations. Such installations could be lighting for festive occasions or streetscaping. These are privately owned and maintained and subject to Electrical Safety Authority and Hydro One service conditions.

This section does not apply to street lighting that is owned by or operated by the road authority and/or the municipal corporation.

Hydro One shall determine whether metering is required on a case-by-case basis by considering the demand, load profile, location, accessibility, duration of the Connection, and municipal agreement.

The nominal service voltage will be 120/240 volts, single phase.

The method and location of the supply will vary and will be established for each application through consultation with Hydro One.

Charges for part time or decorative seasonal lighting include an energy charge calculated at dollars/kWh/month. Minimum billing will be for one month (Dollars per kWh x # of fixtures x kWh).

#### **3.8.4.5 Other Small Services**

Telephone booths, small power supplies, communication amplifiers and antennas, road and utility cathodic protection, railway signals, flasher beacons, and similar small unmetered Customer loads within the public road right-of-way may qualify for unmetered connected servicing.

### **3.8.5 Service Costs**

There are three life cycle states for an unmetered connected load service. They are as follows:

- (i) Proposed;
- (ii) In-service; or
- (iii) Permanently removed.

In each state, the minimum billing period remains as one month regardless of when the unmetered connected load service lifecycle state changes. Also, billing of the energy and fixed charges continues monthly in all lifecycle states until the service has been permanently removed.

### **3.8.5.1 Proposed**

On request of a new connection, the unmetered Customer's proposal will initiate the service point as "Proposed" for a period of up to 90 days.

### **3.8.5.2 In-Service**

An unmetered connected load service is deemed to be "in-service" when it has been energized or it has been electrically isolated (removed from any electrical energy source) at any time between being energized or permanently removed. The two in-service lifecycle states are described as follows:

(i) Energized

An existing unmetered connected load service that has been physically connected to the Hydro One distribution network is deemed to be "Energized".

(ii) Electrically Isolated

An existing unmetered connected load service that has been physically detached from the Hydro One distribution network is deemed to be "Electrically Isolated". Isolation of the unmetered connected load service may be initiated by Hydro One for power quality, outage events, or data issues (See Section 3.8.5.7 Data Requirements), or by the unmetered Customer through written request.

In this lifecycle state, Hydro One continues to calculate the bill (energy and fixed charges) on a per month basis for not more than six consecutive months. Following the sixth month of being "electrically isolated", the unmetered connected load service must be either placed back "in-service" or "permanently removed" from service. Hydro One retains the right to disconnect the service per the terms defined in Section 2.2.

### **3.8.5.3 Permanently Removed**

An unmetered connected load service is deemed "permanently removed" following the sixth consecutive month in the "electrically isolated" state, or when the unmetered Customer requests that the unmetered connected load service be permanently cancelled and physically detached from the Hydro One distribution network energy source.

When an unmetered connected load service has been deemed "permanently removed", billing charges (energy and fixed charges) shall cease as of the next scheduled billing date.

Re-energization of an unmetered connected load service in this lifecycle state shall be treated as a new unmetered connected load service and be subject to the requirements contained within this document for new unmetered connected load service requests.

#### **3.8.5.4 Work by Hydro One**

Hydro One connection, isolation and re-energization fees will apply. Note that extra work by Hydro One beyond a simple, basic connection onto the overhead or underground system is at the unmetered Customer's expense. See Section 2.1.

#### **3.8.5.5 Electrical Disturbances**

Should unmetered Customer loads create disturbances on Hydro One's distribution system, the unmetered connected load service may be billed for subsequent Hydro One restoration costs, or may be "electrically isolated" or "permanently removed" from the Hydro One distribution network.

For more information on the conveyance of electricity and potential impact of Customer connections, including electrical disturbances, see Section 2.3 Conveyance of Electricity.

#### **3.8.5.6 Audit Costs**

Any costs or expenses that are incurred by the unmetered Customer in supporting or responding to the requirements of a Hydro One audit shall be the responsibility of the unmetered Customer.

#### **3.8.5.7 Error Costs**

Hydro One encourages voluntary data error disclosure and data quality improvement.

Recurring data errors, or data quality problems, may result in an unmetered Customer being "electrically isolated" or "permanently removed" from the Hydro One distribution network, with the option for the unmetered Customer to upgrade to a metered service from a Hydro One-designated supply point.

When an unmetered Customer volunteers corrected or improved data before commencement of a joint audit, the unmetered Customer will be held responsible for the corrected consumption usage.

To improve the quality of the unmetered connected load service data, Hydro One encourages the unmetered Customer to cooperate in a joint audit as described in Section 3.8.3.2 Data Audit Requirements. In this case, the unmetered Customer will be responsible for the associated costs and the corrected consumption usage.



If the unmetered Customer provides Hydro One unmetered data that is of insufficient quality (i.e. not meeting audit standards), no data, or late data, the unmetered Customer shall pay Hydro One's field verification and data correction costs, equivalent costs per each unmetered connected load service, and the corrected consumption usage.

## **SECTION 4      GLOSSARY OF TERMS**

“Acquired Local Distribution Company” means a distribution company or a distribution system acquired by Hydro One since April 1, 1999. “Affiliate Relationships Code” means the code, issued by the OEB and in effect at the relevant time, which among other things, establishes the standards and conditions for the interaction between electricity distributors or transmitters and their respective affiliated companies;

“Actual Cost” means Hydro One’s charge for equipment, labour and materials at Hydro One’s standard rates plus Hydro One’s standard overheads and interest thereon;

“Applicable Laws” means any and all applicable laws, including environmental laws, statutes, codes, licensing requirements, treaties, directives, rules, regulations, protocols, policies, by-laws, orders, injunctions, rulings, awards, judgments, or decree or any requirements or decision or agreement with or by any government or governmental department, commission, board, court authority or agency;

“Basic Connection” means a Connection of a Building that Lies Along that can be connected without requiring an Expansion;

“Billing Cycle Factor” means a factor applied to a bill amount in order to normalize to the length of the bill period plus forty-five (45) days for the purposes of calculating security deposit requirements, i.e., a monthly bill is adjusted by a Billing Cycle Factor of 2.5, a bi-monthly bill is adjusted by a Billing Cycle Factor of 1.75 and a quarterly bill is adjusted by a Billing Cycle Factor of 1.5;

“Bi-monthly Billing” means a notional and approximate sixty day (60) period for a billing cycle, not necessarily aligned with calendar months;

“Building that Lies Along” means a Customer property or parcel of land that is directly adjacent to or abuts onto the public road allowance where Hydro One has Hydro One Facilities and Equipment of the appropriate voltage and capacity;

“Capital Cost Recovery Agreement” formerly known as a “Connection Cost Recovery Agreement and means an agreement entered into between Hydro One and a person connected to its Distribution System that describes the work to be performed by Hydro One in connecting the Customer, the cost of same, any required capital contributions and/or revenue guarantees;

“Combination Meter/Breaker Unit” means a meter box that contains both a meter and a breaker unit;

“Common Line” means that portion of a line on private property that is owned by Hydro One and is used to serve more than one Customer;

“Complex Metering Installation” means a Metering Installation where instrument transformers, test blocks, recorders, pulse duplicators and multiple meters may be employed;

“Connection” means the process of installing and activating connection assets in order to distribute electricity to a Customer;

“Connection Assets” means that portion of the Distribution System used to connect a Customer to the existing main Distribution System, and consists of the assets between the point of Connection on the main Distribution System and the Ownership Demarcation Point with that Customer;

“Connection Agreement” means the agreement entered into between Hydro One and a person whose Customer Equipment is or is to be connected to the Distribution System that delineates the conditions of the Connection and delivery of electricity to or from that Connection;

“Connection Cost Agreement” means an agreement made between Hydro One and a Generator in relation to the Connection of a Small Embedded Generation Facility, a Mid-sized Embedded Generation Facility or a Large Embedded Generation to the Distribution System as referred to in Section 6.2.18 of the Distribution System Code;

“Cure Period” means the period of time given to a Defaulting Party for the purposes of remedying an Event of Default under a Connection Agreement;

“Customer” means a person that has contracted for or intends to contract for connection of a building or an Embedded Generation Facility. This includes developers of residential or commercial subdivisions and Embedded Distributors;

“Customer Equipment” means all electrical and mechanical equipment that is owned by the Customer and is used by the Customer and only supplies the Customer’s home or business and does not include any Hydro One Facilities and Equipment;

“Demand Billed Customer” means a non-residential Customer with average monthly peak demand equal to or greater than 50 kW over the most recent calendar year that is read monthly and billed on kW demand or 90% of kVA as well as kWh energy;

“Demand Meter” means a meter that measures a Customer’s peak usage during a specified period of time;

“Disconnect” or “Disconnection” means a deactivation of connection assets that result in cessation of Distribution Services to a Customer;

“Disconnect/Collect Trip” is a visit to a Customer’s premises by an employee or agent of Hydro One to demand payment of an outstanding amount or to shut off or limit distribution of electricity to the Customer failing payment;

“Distribute” or “Distribution” with respect to electricity, means to convey electricity at voltages of 50 kV or less;

“Distribution Facility” means all distribution electrical equipment and systems associated with delivering electrical power from a transmission connection facility to one or more distribution end-use Customers. A Distribution Facility normally includes a distribution feeder and may include a distribution station, as well as a secondary distribution feeder. Voltage regulating devices, overcurrent protection devices, and metering equipment are all examples of equipment that are typically also included as part of a Distribution Facility. Any reference to a Distribution Facility in these Conditions of Service means a Hydro One–owned Distribution Facility, unless otherwise noted.

“Distribution Losses” means energy losses that result from the interaction of intrinsic characteristics of the distribution network such as electrical resistance with network voltages and current flows;

“Distribution Loss Factor” means the factor(s) by which metered loads must be multiplied such that when summed it equals the total measured load at the supply point(s) to the Distribution System;

“Distribution Services” means services related to the distribution of electricity and the services the OEB has required Distributors to carry out, for which a charge or Rate has been approved by the OEB under Section 78 of the *Ontario Energy Board Act*;

“Distribution Standards” means Hydro One’s distribution standards;

“Distribution System” means Hydro One’s system for distributing electricity, and includes any structures, equipment or other things used for that purpose. The Distribution System is composed of the main system capable of distributing electricity to many Customers and the connection assets used to connect a Customer to the main Distribution System;

“Distribution System Code” means the code, issued by the OEB, and in effect at the relevant time, which, among other things, establishes the obligations of a Distributor with respect to the services and terms of service to be offered to Customers and Retailers and provides minimum technical operating standards of distribution systems;

“Distributor” means a person who owns or operates a distribution system;

“Distributor Consolidated Billing” is as described in the Retail Settlement Code;

“Electricity Act” means the *Electricity Act, 1998*, being Schedule A to the *Energy Competition Act*, S.O. 1998, c. 15, as amended;

“Electricity Distribution Rate Handbook” means the document issued by the OEB that outlines the regulatory mechanisms that will be applied in the setting of Distributor’s Rates;

“Electrical Safety Authority” or “ESA” means the person or body designated under the regulations made pursuant to the *Electricity Act* as the Electrical Safety Authority;

“*Electrical Safety Code*” means the code referred to in O. Reg. 164/99, as amended;

“Electricity System” means the integrated power system and all facilities connected to that system;

“Eligible Low-Income Customer” means, effective October 1, 2011,:

- (a) a residential Customer who has a pre-tax household income at or below the pre-tax Low Income Cut-Off, according to Statistics Canada, plus 15%, taking into account family size and community size, as qualified by a social service agency or government agency; or
- (b) a Customer who has been qualified for any OEB-approved emergency financial assistance program made available by Hydro One for Eligible Low-Income Customer,
- (c) and said Customer shall remain an Eligible Low-Income Customer for a period of two (2) years from the date on which the Customer first qualified as an Eligible Low-Income Customer.

“Embedded Distributor” or “Embedded LDC” means a Distributor that is provided electricity by the Host Distributor. In this document, an Embedded Distributor or Embedded LDC may or may not be a Wholesale Market Participant;

“Embedded Generator” means a Generator whose Generation Facility is connected to the Distribution System;

“Embedded Generation Facility” means a Generation Facility which is not directly connected to the IESO-controlled Grid but instead is connected to a distribution system and has the extended meaning given to it in Section 1.9 of the Distribution System Code;

“Emergency” means any abnormal system condition that requires remedial action to prevent or limit loss of a Distribution System or supply of electricity that could adversely affect the reliability of the Electricity System;

“Emergency Backup Generation Facility” means a Generation Facility that has a transfer switch that isolates it from the Distribution System;

“Energy Meter” means a meter that measures a Customer’s energy consumption

“Energy Only Customer” means any Customer with average monthly peak demand of less than 50 kW over the most recent calendar year that is billed for electricity service on kWh energy only;

“Energy Storage Facility” means an energy storage facility that has a transfer switch that isolates it from the Distribution System;

“Event of Default” means a Financial Default or a Non-financial Default;

“Expansion” is a situation in which Hydro One needs to construct new facilities to its main Distribution System or increase the capacity of existing Hydro One Facilities and Equipment of its main Distribution System in order to be able to connect a specific Customer;

“Existing Park Facilities” means distribution facilities that are owned by Hydro One and are within the park boundary;

“Financial Default” means a failure by a party to pay an amount to the other party to the Connection Agreement when due, including failure to pay compensation or indemnification for loss or damage to agreed by the parties or for amounts determined to be owed to a party as a result of the settlement or resolution of a dispute arising under a Connection Agreement;

“Force Majeure Event” shall be deemed to be a cause reasonably beyond the control of the party whose inability as aforesaid is involved such as, but without limitation to, strike, lockout or other labour dispute of that party’s employees, damage or destruction by the elements, accident to the works of that party, fire explosion, war on the Queen’s enemies, legal act of the public authorities, insurrection, Act of God or inability to obtain essential services or to transport materials, products or equipment because of the effect of similar causes on that party’s suppliers or carriers;

“Four-Quadrant Interval Meter” means an Interval Meter that records power injected into the Distribution System and the amount of electricity consumed by the Customer;

“General Service” means the Rate classifications applicable to any service that does not fit the description of year-round residential or seasonal residential, Sub-Transmission (ST), MicroFIT Generator, Distributed Generation customer classes, and Lighting classes. Generally, it is composed of commercial, industrial, educational, administrative, auxiliary and government type services. It includes combination-type services where a variety of uses are made of the service by the

owner of one property, and all multiple services except residential with up to four units;

“Generate” or “Generating”, with respect to electricity, means to produce electricity or provide ancillary services, other than ancillary services provided by a transmitter or distributor through the operation of a transmission or distribution system;

“Generation Facility” means a facility for Generating electricity or providing ancillary services, other than ancillary services provided by a transmitter or Distributor through the operation of a transmission or distribution system, and includes any structures, equipment or other things used for that purpose;

“Generator” means a person who owns or operates a Generation Facility;

“Good Utility Practice” means any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry in North America during the relevant time period, or any of the practices, methods and acts which in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in North America;

“Historical Capacity” is defined in section 3.7.G.2

“Host Distributor” means the Distributor who provides electricity to an Embedded Distributor and for the purposes of these Conditions of Service, means Hydro One;

“Hydro One Facilities and Equipment” means Hydro One’s Meter Installation(s), wires, poles, cables, transformers, any other structures, equipment, all other appliances and equipment or other things used for distributing electricity;

“IESO” means the Independent Electricity System Operator established under the *Electricity Act*;

“IESO Controlled Grid” means the transmission systems with respect to which, pursuant to agreements, the IESO has the authority to direct operation;

“Insolvency/Dissolution Event” means any of the following in respect of a party, the making of an order or resolution for the winding up of the party or of its operations or the occurrence of any other dissolution or liquidation proceeding instituted by or against a party, including, but not limited to bankruptcy and insolvency;

“Interval Meter” means a meter that measures and records electricity use on an hourly or sub-hourly basis;

“Land Lease Community Home”, means any dwelling that is a permanent structure where the owner of the dwelling leases the land used or intended for use as the site for the dwelling, but does not include a mobile home;

“Large Embedded Generation Facility” means an Embedded Generation Facility with a name-plate capacity of more than 10 MW;

“Load Displacement” means in relation to a Generation Facility that is connected on the Customer side of the Ownership Demarcation Point, that the output of the Generation Facility is used or intended to be used exclusively for the Customer’s own consumption;

“Load Displacement Generation Facility” means an Embedded Generation Facility that is used exclusively for Load Displacement purposes at all times;

“Load Controller” is a device that will control the amount of power delivered to a premise. Load interrupters are also used to control the amount of power delivered. The load controlling devices are typically used during collection activity;

“Load Transfer” means a network supply point of one distributor that is supplied through the distribution network of another distributor and where this supply point is not considered a wholesale supply or bulk sale point;

“Load Transfer Customer” means a Customer that is provided Distribution Services through a Load Transfer;

“Local Distribution Company” or “LDC” means a Distributor licensed by the Ontario Energy Board who is an Embedded Distributor;

“Low Density Zone (R2)” means an area other than an Urban or Medium Density Zone;

“Market Participant” means a person who is authorized by the Market Rules to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid;

“Market Rules” means the rules made under Section 32 of the *Electricity Act*;

“Measurement Canada” means the Special Operating Agency established in August 1996 by the *Electricity and Gas Inspection Act* (Canada);

“Medium Density Zone (R1)” means an area containing 100 or more Customers with a line density of at least 15 Customers per kilometre. All classes of Customers are included in the density count;



“Meter Installation” means the meter and, if so equipped, the instrument transformers, wiring, test links, fuses, lamps, loss of potential alarms, meters, data recorders, telecommunication equipment and spin-off data facilities installed to measure power past a meter point, provide remote access to the metered data and monitor the condition of the installed equipment, whether or not such equipment is located in the immediate vicinity of the meter and includes, where applicable, a Socket-Mounted Collector or a Pole-Mounted Collector, and including all other equipment required for the Meter Installation;

“Metering Services” means installation, testing, reading, and maintenance of meters;

“Micro-embedded Generation Facility” means an Embedded Generation Facility with a name-plate rated capacity of 10 kW or less;

“MicroFit Contract” means an agreement made between the Ontario Power Authority and a Generator in respect of the feed-in tariff program for Micro-embedded Generation Facilities;

“MicroFIT Generation Facility” means a Micro-embedded Generation Facility with a MicroFIT Contract;

“Mid-Sized Embedded Generation Facility” means an Embedded Generation Facility with a name-plate rated capacity of 10 MW or less and:

- (a) more than 500 kW in the case of a facility connected to a less than 15 kV line; and
- (b) more than 1 MW in the case of a facility connected to a 15 kV or greater line;

“MIST” refers to “Metering Inside the Settlement Timeframe”;

“MIST Meter” means an Interval Meter from which data is obtained and validated within a designated settlement timeframe;

“Mobile Home” means any dwelling that is designed to be made mobile, and constructed or manufactured to provide a permanent residence for one or more persons, but does not include a travel trailer, tent trailer or trailer otherwise designed;

“Monthly Billing” means a notional and approximate 30-day period for a billing cycle, not a calendar month;

“MOST” refers to “Metering Outside the Settlement Timeframe”;

“MOST Meter” means an Interval Meter from which data is only available outside of the designated settlement timeframe;

“Multiple Residential Properties” means a property, which provides separate living accommodation for two or more families. It does not include properties used for short-term occupancy such as hotels, motels, etc.;

“Net Metered Generation Facility” means an Embedded Generation Facility that meets the requirements of O. Reg. 541/05 “Net Metering”;

“Neutral Ground Resistor (NGR)” means a resistor that has been installed between the transformer neutral and ground;

“Non-financial Default” means in respect of a party:

- (a) any breach of a Connection Agreement by that party, other than a breach that constitutes a Financial Default;
- (b) the licence (if any) of the party is suspended, withdrawn or revoked or expires without being replaced; or
- (c) an Insolvency/Dissolution Event occurs in relation to the party;

“OEB” means the Ontario Energy Board;

“Ontario Energy Board Act” means the *Ontario Energy Board Act, 1998*, being Schedule B to the *Energy Competition Act*, S.O. 1998. c. 15, as amended;

“Operational Demarcation Point” means the physical location at which Hydro One’s responsibility for operational control of distribution equipment, including Connection assets ends at the Customer;

“Ownership Demarcation Point” means the physical location at which Hydro One’s ownership of distribution equipment, including Connection assets ends at the Customer;

“Personal Information” means any factual or subjective information, recorded or not, about an identifiable individual and this includes information in any form such as: age, name, ID numbers, income, ethnic origin, or blood type, opinions, evaluations, comments, social status, or disciplinary actions. Personal information does not include the name, title, business address or telephone of an employee of an organization;

“Point of Common Coupling” or “PCC” or “Point of Supply”, with respect to an Embedded Generation Facility, means the Connection point where electricity produced by the Embedded Generation Facility is injected into the Distribution System;

“Pole-Mounted Collector” means an advanced metering infrastructure device installed on a Customer-owned pole to support meter communications;

“Present Value” means the current value of a future amount of money;

“Primary Metered Service” means a Connection whose meter point is located on the primary side of a distribution transformer;

“Primary Service” means a Connection directly to Hydro One’s primary facilities. The Customer owns all conductors, supports and civil works located on its property;

“Private Property” means any property owned by a Customer or a third party and does not include any public street or highway;

“Promptly” means performed in an expeditious manner and without undue delay, using due diligence, and with the intent of completing a required act or task as quickly as practicable;

“Public Holidays” mean the days designated by Hydro One from time to time. Until otherwise designated, including: New Year’s Day, Family Day, Labour Day, Good Friday, Thanksgiving Day, Easter Monday, Christmas Day, Victoria Day, Boxing Day, Canada (Dominion) Day, and the Civic Holiday (as celebrated in Metropolitan Toronto);

“Qualified Contractor” means a contractor qualified to deal with electrical hazards in accordance with the requirements of the Occupational Health & Safety Act, (Ontario) as amended and all applicable regulations thereto including, Construction Projects – O. Reg. 213/91;

“Quarterly Billing” means a notional and approximate 90-day period for a billing cycle, not necessarily aligned with calendar months;

“Rate” means any rate, charge or other consideration, and includes a penalty for late payment;

“Refund Administration Service” means the service offered prior to the Distribution System Code coming into force to new Customers requiring an Expansion for Connection to the Distribution System, as such Customers were required to pay all costs of the Expansion. For a fee, Hydro One monitored new Connections to the line, to collect from any new Customers connecting to the original Expansion a fair share of the original costs and to administer a refund to the original or contributor or the present property owner. This service was provided in 5-year terms and could be renewed for additional 5-year terms upon additional payments of the fee. Customers who did not opt for a Refund Administration Service were not eligible for rebates if new Customers were added to the original expansion. Refund Administration Service is no longer offered to new Customers requiring Expansions for Connection;

“Regulated Price Plan” or “RPP” means the Rate plan established by the Ontario Energy Board for retailing of electricity to eligible consumers, as defined by regulations made pursuant to the *Ontario Energy Board Act*. Regulated prices are established for tiered pricing or time-of-use pricing;

“Registered Meter Service Provider” means a Person that provides, installs, commissions, registers, maintains, repairs, replaces, inspects and tests Metering Installations and is approved and registered by Measurement Canada and the IESO;

“Renewable Energy Expansion Cost Cap” has the meaning given to it in the Distribution System Code;

“Renewable Energy Generation Facility” has the meaning given to it in the *Ontario Energy Board Act*;

“Renewable Enabling Improvement” has the meaning given to it in the *Ontario Energy Board Act*;

“Retail”, with respect to electricity means,

- a) to sell or offer to sell electricity to a Customer;
- b) to act as agent or broker for a Retailer with respect to the sale or offering for sale of electricity; or
- c) to act or offer to act as an agent or broker for a Customer with respect to the sale or offering for sale of electricity;

“Retail Settlement Code” means the code issued by the OEB and in effect at the relevant time, which, among other things, establishes a Distributor’s obligations and responsibilities associated with financial settlement among Retailers and Customer and provides for tracking and facilitating Customer transfers among competitive Retailers;

“Retailer” means a person who Retailers electricity;

“Retailer Consolidated Billing” is as described in the Retail Settlement Code;

“Secondary Metered Service” means a Connection whose meter point is located on the secondary side of a distribution transformer;

“Secondary Service” means a Connection to the low voltage side of Hydro One’s transformer located on the Distribution System. Hydro One may own the conductor and the Customer always owns all supports and civil works on the Customer’s property;

“Service Transfer Request” is as described in the Retail Settlement Code;

“Single Phase” means a system that supplies a single alternating current electricity supply;

“Small Embedded Generation Facility” means an Embedded Generation Facility which is not a Micro-Embedded Generation Facility with a name-plate rated capacity of 500 kW or less in the case of a facility Connected to a less than 15 kV line and 1 MW or less in the case of facility connected to a 15 kV or greater line;

“Smart Grid” means the advanced information exchange systems and equipment described in subsection 1.3 of the *Electricity Act*;

“Smart Meter” means a meter that is part of an advanced metering infrastructure that meets the functional specification referenced in the Criteria and Requirements for Meters and Metering Equipment, Systems and Technology Regulation, O. Reg. 425/06;

“Smart Metering Data” means data derived from Smart Meters, including data related to consumer’s consumption of electricity;

“Smart Metering Entity” or “SME” means the corporation incorporated, the limited partnership or the partnership formed or the entity designated pursuant to Section 53.7 of the *Electricity Act* to accomplish the government’s smart metering initiative;

“Socket-Mounted Collector” means an advanced metering infrastructure device installed in the Customer’s meter base to support meter communications;

“Standard Supply Service” means the service approved by the OEB and in effect at the relevant time, which, among other things, establishes the minimum conditions that a Distributor must meet in carrying out its obligations to sell electricity under Section 29 of the *Electricity Act*;

“Standard Supply Service Code” means the code, issued by the OEB, and in effect at the relevant time, which, among other things, sets the minimum conditions that a Distributor must meet in carrying out its obligation to sell electricity under Section 29 of the *Electricity Act* unless otherwise stated in its licence;

“Sub-Transmission Customer” means:

- (a) an Embedded Distributor; or
- (b) a customer who has a load which is: a) three-phase; b) directly connected to and supplied from Hydro One’s Distribution assets between 44 kV and 13.8 kV inclusive (the meaning of “directly” includes where Hydro One does not own the local transformation); and c) greater than 500 kW (monthly measured maximum demand averaged over the most recent calendar year, or whose forecasted monthly average demand over twelve consecutive months is greater than 500 kW);

“Sub-transmission System” means a system related to the Distribution of electricity supplied at voltages above 13 kV, 3 wire but less than 50 kV, 3 wire;

“Technical Interconnection Requirements” means:

- (a) Hydro One’s “Interconnection Requirements for Distributed Generation for Single phase DG – 10 kW or less and Three phase – less than 30 kW” which applies to all Micro-Embedded Generation Facilities and Small Embedded Generation Facilities that have a name-plated rated capacity of less than 30 kW; and
- (b) Hydro One’s “Distributed Generation Technical Interconnection Requirements for Generators Connecting to Hydro One’s Distribution System” which applies to all Generation Facilities other than those that are subject to the “Interconnection Requirements for Distributed Generation for Single phase DG – 10 kW or less and Three phase - less than 30 kW”;

“Three Phase” means a system having three distinct alternating currents 120 degrees between each phase;

“Total Losses” means the sum of Distribution Losses and Unaccounted for Energy;

“Transformer Loss Adjustment” means the dollar value given to a customer account to rectify a charge of lost energy. A Sub-transmission Customer qualifies for Transformer Loss Adjustment provided that their meter is located on the secondary side of the transformer. “Transformer Loss Allowance” means the dollar value added to a customer account to compensate for predicted energy loss. A General Service Customer qualifies for Transformer Loss Allowance, provided that their meter is located on the primary side of the transformer;

“Total Normal Supply Capacity” is defined in section 3.7.G.1

“Unaccounted for Energy” means all energy losses that cannot be attributed to Distribution Losses. These include measurement error, errors in estimates of Distribution Losses and, energy theft and non-attributable billing errors;

“Unmetered Loads” means electricity consumption that is not metered and is billed based on estimated usage;

“Upstream Transmission Rebates” means refunds payable to any initial contributors in respect of work previously or currently being performed on Hydro One’s transmission system at the expense of initial contributor(s) where such work benefits future Customers and Embedded Generation Facilities that connect to Hydro One’s distribution system within five years of the in service date of that work. Upstream Transmission Rebates are determined by Hydro One considering such factors as the relative name-plated capacities of the initial contributor(s) and the future connecting Customer(s);

“Urban Density Zone (UR)” means an area containing 3,000 or more Customers with a line density of at least 60 Customers per kilometre. All classes of Customers are included in the density count;

“Utilization Voltage” means the highest voltage at which a Customer uses or distributes power on the Customer’s property;

“Validating, Estimating and Editing” or “VEE” means the process used to validate, estimate and edit raw metering data to produce final metering data or to replicate missing metering data for settlement purposes; and

“Wholesale Market Participant”, means a person that sells or purchases electricity or ancillary services through the IESO administered markets.

## **Appendix A**

### **A. Description of Certain Agreements**

#### **I. Customer Service Contract**

Key provisions of the Customer Service Contract are:

- a description of the work to be performed by Hydro One including specifications such as capacity and voltage range and work to be performed by the Customer;
- final Ownership Demarcation Point for Connection;
- requirement that Customer obtain all necessary approvals for the construction and Connection, including ESA approval, except where specifically noted that Hydro One is obligated to obtain the approval;
- property requirements, e.g. easements;
- requirement that both parties perform their work in accordance with Good Utility Practice, in compliance with the Conditions of Service, the Distribution System Code, all Applicable Laws and using duly qualified and experienced people;
- an estimate of the cost (plus applicable taxes) of the work to be performed by Hydro One;
- a requirement that the Customer reimburses Hydro One for costs and expenses in certain circumstances, e.g. where the Customer changed the condition of the Service Location or the Electrical System, or utilized a Basic Connection intended for the supply of electricity to inappropriately connect an Embedded Generation Facility to Hydro One's Distribution System;
- Hydro One and the Customer liable for damages only that arise directly out of the wilful misconduct or negligence and Hydro One's total liability is limited to the aggregate amounts paid for the Work by the Customer to the date of such negligent act or wilful misconduct.

#### **II. Capital Cost Recovery Agreement**

Section 2.1.7C of the Conditions of Service describes the Customers that in addition to executing a Customer Service Contract are also required to enter into a Capital Cost Recovery Agreement (the "CCRA") with Hydro One. Key provisions in the CCRA are:

- capital contribution requirements (if any) and associated payment schedule;
- annual revenue requirements to be met by Customer including financial and non-financial default conditions;
- Customer may be required to furnish security satisfactory to Hydro One, including deposit;
- limitation of liability; and



- deferral, cancellation or termination clauses that the Customer pays Hydro One for the cost of the work performed to date and the cost associated with the winding up of the work.

### **III. Connection Cost Agreement (formerly known as the Connection Cost Recovery Agreement”)**

The Connection Cost Agreement (“CCA”) means the agreement that Hydro One is required to enter into with a Small Embedded Generation Facility, a Mid-sized Embedded Generation Facility or a Large Embedded Generation Facility (the “Generation Facility”) in accordance with Section 6.2.18 of the Distribution System Code. Key provisions in the CCA are:

- a description of the work to be performed by Hydro One and the Generator in order for Hydro One to connect the Generation Facility to the Distribution System;
- Hydro One’s estimate of the allocated cost of Connection for which the Generator is responsible;
- Generator’s requirement to pay certain deposits within the timeframes specified in the CCA;
- requirement for Hydro One to remove the Generator’s capacity allocation in the circumstances described in Subsection 6.2.4.1e. ii., iii., iv. and v of the Distribution System Code;
- terms applicable where the Generator has elected to perform Alternative Bid work;
- limitation of liability;
- the generator’s right to assign the CCA to a lender for security purposes without Hydro One’s consent upon providing notice to Hydro One; and
- the right of Lender to remedy a default of the Generator.

### **IV. Subdivision Agreement/Multi-Service Connection Cost Agreement**

Customers proposing to expand or develop an industrial/commercial or residential subdivision or to develop a condominium shall execute a Subdivision Agreement/Multi-Service Connection Cost Agreement. Key provisions of this agreement are:

- a description of the work to be performed by Hydro One, including inspection of Customer’s contractor’s work;
- detailed description of the work to be performed by the Customer;
- requirement that Customer obtain all necessary approvals for the construction and Connection, including ESA approval, except where specifically noted that Hydro One is obligated to obtain the approval;
- property requirements, e.g. easements;

- an estimate of the cost (plus applicable taxes) of the work to be performed by Hydro One;
- security/expansion deposit and capital contribution requirements;
- requirement that Customer provide evidence of Customer's proposed contractor's previous experience and satisfactory performance prior to contractor beginning the installation of the Electrical Distribution System;
- obligation to transfer Electrical Distribution System and the Line Extension constructed by the Customer to Hydro One free and clear for one dollar;
- Customer required to warrant the Electrical Distribution System and the Line Extension constructed by the Customer to be free from defects for two (2) years;
- limitation of liability; and
- Customer to maintain certain specified types of insurance with minimum limits during term of the agreement.

#### **V. Connection Agreement :**

Subsection 2.1.7F(i) of the Conditions of Service describes the circumstances where certain Customers required to enter into a Connection Agreement with Hydro One. Hydro One's form of the Distribution Connection Agreement sets out the terms upon which Hydro One has agreed to offer and the Customer has agreed to accept connection service.

Key provisions and requirements of Hydro One's form of Connection Agreement are:

- terms, conditions and obligations of the parties as prescribed under the Distribution System Code;
- lists all necessary contact names and telephone numbers of both parties to ensure proper communication;
- the demarcation of the Ownership Demarcation Point and the Operational Demarcation Point as between Hydro One and the Customer;
- description of the language and procedures to be used for communications between the parties in normal and emergency situations;
- technical description of the Customer's installed protection equipment;
- the single line diagram provided by the Customer that identifies the interface of the Customer's facilities with the Distribution System;
- the description of the metering information;
- the tariff applications by supply point as well as payment requirements;
- the levels of maintenance and testing to be performed by both parties;

- the circumstances under which the Customer can be disconnected from the Distribution System for financial or non-financial defaults;
- the specific technical requirements applicable for a particular type of Customer:
  1. Load Customers: includes Hydro One's requirements with respect to disconnection devices, system design and protection, metering and grounding, capacity of each connection point, motor size and starting and operating requirements; and
  2. Embedded LDCs: includes Hydro One's requirements with respect to disconnection devices, protection and coordination and metering as well as the data to be provided by the Embedded LDC when making requests for additional supply, capacity of each embedded connection point, requirements for load forecast information to be provided by Embedded LDC for each connection point for use in supply planning studies, and may include specific thresholds for embedded load connections, e.g. load/motor sizes, for system impact assessment studies;
- performance requirements for various power quality items such as voltage variations, unbalances, voltage and current harmonics;
- for most Customers, description of metering, instrument transformer, meter programming and meter communications requirements as well as specification of site specific losses; and
- the name of the Customer's Registered Meter Service Provider.

## **VI. Read Only Access Agreement To Interval Meters**

If a Customer who is not a Wholesale Market Participant requires remote electronic access to their interval meter recorders, the Customer must execute a Read Only Access Agreement ("ROA"). The ROA allows Customers to have remote electronic access to their interval meter recorders for the purposes of obtaining kilowatt hour and kilovar hour billing meter quantities. Key provisions of the ROA Agreement are:

- Customer is permitted to use, at its expense, only software and communications protocols that have been specifically approved by Hydro One;
- Customer access is limited to daily interrogations, within a time frame specified by Hydro One;
- Hydro One does not provide assistance for reading or interpretation of Metering Information; and
- Customer may have only one third party, who has been approved by Hydro One, to have remote access to the metering data on its behalf.

## **VII. Access Agreements**

Customers requiring ongoing access to Hydro One Facilities and Equipment to operate or maintain Distribution equipment including wholesale revenue metering must enter into an Access Agreement. Key provisions of an Access Agreement are:

- requirement to comply with Hydro One’s security protocol and Access Policy and Procedures;
- requirement to provide a list of employees, temporary employees, agents, subcontractors and licensees (the “Customer Personnel”) requiring access;
- Customer responsible for ensuring that Customer Personnel have adequate Electrical Safety Awareness Training;
- Customer required to use the contact number provided by Hydro One to enter and exit Distribution facility;
- describes the limitations on access within operational areas within the Distribution facility; and
- Customer is responsible for any and all losses to persons (including death) including Customer personnel or property when accessing the specified Hydro One Facilities and Equipment.