

Bill No. 213  
2016

By-law No. A.-\_\_\_\_\_

A By-law to approve the London Hydro Form of Connection Agreement for a Small or a Mid-sized Embedded Generation Facility for the purpose of rendering the combined heat and power system at the Canada Games Aquatic Centre approved for operation; and to authorize the Mayor and City Clerk to act on behalf of The Corporation of the City of London and execute the Agreement.

WHEREAS section 2 of the Municipal Act, 2001, S.O. 2001, c.25, as amended, provides that municipalities are created by the Province of Ontario to be responsible and accountable governments with respect to matters within their jurisdiction and each municipality is given powers and duties under this Act and many other Acts for the purpose of providing good government with respect to those matters;

AND WHEREAS section 9 of the Municipal Act, 2001 provides that a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under this or any other Act;

AND WHEREAS section 10 of the Municipal Act, 2001 provides that a municipality may provide any service or thing that the municipality considers necessary or desirable for the public; and may pass by-laws respecting economic, social and environmental well-being of the municipality, and may pass by-laws respecting services and 'things the municipality is authorized to provide';

AND WHEREAS subsection 5(3) of the Municipal Act, 2001 provides that a municipal power shall be exercised by by-law:

NOW THEREFORE the Municipal Council of The Corporation of the City of London enacts as follows:

1. London Hydro Form of Connection Agreement for a Small or a Mid-sized Embedded Generation Facility, attached as Schedule "A", to be entered into between The Corporation of the City of London and London Hydro for the purpose of rendering the combined heat and power system at the Canada Games Aquatic Centre approved for operation, this By-law, is approved.
2. The Mayor and the City Clerk are authorized to execute the agreement approved under section 1 above.

This by-law shall come into force and effect on the day it is passed.

PASSED in Open Council May 31, 2016.

Matt Brown  
Mayor

Catharine Saunders  
City Clerk

First reading – May 31, 2016  
Second reading – May 31, 2016  
Third reading – May 31, 2016



**LONDON HYDRO FORM OF CONNECTION AGREEMENT**  
**FOR A SMALL OR A MID-SIZED EMBEDDED GENERATION FACILITY**

This Connection Agreement is made this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

**BETWEEN**

London Hydro Inc. ("London Hydro") 111 Horton Street, London (Address)

**AND**

The Corporation of the City of London (the "Generator") 300 Dufferin Avenue (Address)

(each a "Party" and collectively the "Parties")

**RECITALS**

WHEREAS London Hydro is the owner of the distribution system serving the service area as described in its electricity distribution license number RP-2002-0220/EB-2002-0557 (the "License") issued by the Ontario Energy Board (the "Board") (the "London Hydro's distribution system").

AND WHEREAS the Generator owns or operates a 57 kW embedded Natural Gas generation facility that is located in the London Hydro (e.g. Solar, Wind, Biomass)

licensed service area (the "Facility").

AND WHEREAS the Generator has connected or wishes to connect its Facility to the London Hydro distribution system and London Hydro has connected or has agreed to connect the Facility to the London Hydro distribution system.

AND WHEREAS London Hydro has previously reviewed and accepted the Generator's application to connect and related materials that were submitted to London Hydro in accordance with the process set out in the Distribution System Code (the "Code") (all together, the "Application") and London Hydro and the Generator have signed a connection cost agreement (both of which are attached to this Agreement as Schedule A).

AND WHEREAS the Generator has requested a connection in accordance with its License and the Code, London Hydro has agreed to offer, and the Generator has agreed to accept, distribution service in relation to the Facility.

**NOW THEREFORE** in consideration of the foregoing, and of the mutual covenants, agreements, terms and conditions herein contained, the Parties, intending to be legally bound, hereby agree as follows:

## 1. Definitions and Schedules

1.1 Words and phrases contained in this Agreement (whether capitalized or not) that are not defined in this Agreement have the meanings given to them in the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, any regulations made under either of those Acts, or the Code.

1.2 The following schedules form part of this Agreement:

Schedule A – Application and Connection Cost Agreement (recitals)

Schedule B – Single Line Diagram, Connection Point, Location of Facilities (section 2.3)

Schedule C – List of Other Contracts (section 3.4)

Schedule D – Technical and Operating Requirements (section 4.1(d))

Schedule E – Billing and Settlement Procedures (section 5.3)

Schedule F – Contacts for Notice (section 12.1)

Schedule G – Dispute Resolution (section 16.1)

Schedule H – Provisions Applicable if Facility Financed by a Lender (sections 19.3, 20.3 and 21.1)

Where a schedule is to be completed by the Parties, the Parties may not include in that schedule a provision that would be contrary to or inconsistent with the Code or the remainder of this Agreement.

## 2. Type of Facility

2.1 The Facility has a name-plate rated capacity of

- more than 10 kW and:
  - (a) up to and including 500 kW, if the Facility is or will be connected to a less than 15 kV line; or
  - (b) up to and including 1 MW, if the Facility is or will be connected to a 15 kV or greater line(in which case the Facility is a “Small Embedded Generation Facility”).
- 10 MW or less and:
  - (a) more than 500 kW, if the Facility is or will be connected to a less than 15 kV line; or

- (b) more than 1 MW, if the Facility is or will be connected to a 15 kV or greater line

(in which case the Facility is a "Mid-sized Embedded Generation Facility")

2.2 The Facility is or will be connected:

- directly to the London Hydro distribution system
- on the load customer side of a connection point to the London Hydro distribution system.
  - the load customer is the same as the Generator
  - the load customer is: \_\_\_\_\_

2.3 Schedule B sets out the following:

- (a) a single line diagram of the Facility;
- (b) a list of the facilities of one Party that are on the property of the other Party; and
- (c) a diagram of the metering installations applicable to the Facility.

2.4 The Generator:

- is an "Embedded Retail Generator" and intends to:
  - sell output from the Facility to the Ontario Power Authority and has entered into an agreement with the Ontario Power Authority for that purpose; or
  - deliver and / or sell output from the Facility to London Hydro
- does not intend to sell any of the output of the Facility to the Ontario Power Authority or London Hydro

**3. Incorporation of Code and Application of Conditions of Service and Other Contracts**

3.1 The Code, as it may be amended from time to time, is hereby incorporated in its entirety by reference into, and forms part of this Agreement. Unless the context otherwise requires, all references to "this Agreement" include a reference to the Code.

3.2 London Hydro hereby agrees to be bound by and at all times to comply with the Code, and the Generator acknowledges and agrees that London Hydro is bound at all times to comply with the Code in addition to complying with the provisions of this Agreement.

3.3 In addition to this Agreement, the relationship between London Hydro and the

Generator will be governed by London Hydro's Conditions of Service that are in effect at the relevant time. In the event of a conflict or an inconsistency between a provision of this Agreement and a provision of London Hydro's Conditions of Service, the provision of this Agreement shall govern.

- 3.4 London Hydro may require or may have already required the Generator to enter into one or more of the other contracts listed in Schedule C. In the event of a conflict or an inconsistency between a provision of the Code or this Agreement and a provision of such other contract, the provision of the Code or this Agreement shall govern.

#### **4. Facility Standards**

- 4.1 The Generator shall ensure that the Facility:

- (a) meets all applicable requirements of the Electrical Safety Authority ("ESA");
- (b) conforms to all applicable industry standards including, but not limited to, those of the Canadian Standards Association ("CSA"), the Institute of Electrical and Electronic Engineers ("IEEE"), the American National Standards Institute ("ANSI") and the International Electrotechnical Commission;
- (c) is installed, constructed, operated and maintained in accordance with this Agreement, London Hydro's offer to connect, the requirements of the ESA, the connection cost agreement, all applicable reliability standards and good utility practice; and
- (d) meets the technical and operating requirements set out in Schedule D. These requirements shall not exceed any technical or operating requirements set out in the Code unless the Generator agrees.

#### **5. Charges, Settlement and Billing**

- 5.1 The Generator shall pay London Hydro such charges as may be approved by the Board in relation to the connection of, and the provision of distribution service to, the Facility.

- 5.2 The Generator agrees to the following in relation to settlement for the output of the Facility:

- if the Generator is not an Embedded Retail Generator (see section 2.4)  
London Hydro will not pay the Generator for any excess generation that results in a net delivery to London Hydro between meter reads and there will be no carryover of excess generation from one billing period to the next, unless the Generator is at the relevant time a *net metered* generator
- if the Generator is an Embedded Retail Generator (see section 2.4)

London Hydro will settle all applicable payments and charges in accordance with the Retail Settlement Code

- 5.3. Billing and settlement activities will be conducted in accordance with the procedures set out in Schedule E.

## **6. Representations, Warranties and Liabilities**

6.1 The Generator represents and warrants to London Hydro as follows, and acknowledges that London Hydro is relying on such representations and warranties without independent inquiry in entering into this Agreement:

- (a) the Facility is fully and accurately described in the Application;
- (b) all information in the Application is true and correct;
- (c) the Facility is in compliance with all applicable technical requirements and laws;
- (d) the Generator has been given warranty information and operation manuals for the Facility;
- (e) the Generator has been adequately instructed in the operation and maintenance of the Facility and the Generator has developed and implemented an operation and maintenance plan based on those instructions;
- (f) if the Generator is a corporation or other form of business entity, the Generator is duly incorporated, formed or registered (as applicable) under the laws of its jurisdiction of incorporation, formation or registration (as applicable);
- (g) the Generator has all necessary power, authority and capacity to enter into this Agreement and to perform its obligations under this Agreement;
- (h) this Agreement constitutes a legal and binding obligation on the Generator, enforceable against the Generator in accordance with its terms;
- (i) the Generator holds all permits, licenses and other authorizations that may be necessary to enable it to own and operate the Facility; and
- (j) any individual signing this Agreement on behalf of the Generator has been duly authorized by the Generator to sign this Agreement and has the full power and authority to bind the Generator.

6.2 London Hydro represents and warrants to the Generator as follows, and acknowledges that the Generator is relying on such representations and warranties without independent inquiry in entering into this Agreement:

- (a) London Hydro is duly incorporated under the laws of Ontario;
- (b) London Hydro has all necessary power, authority and capacity to enter into this Agreement and to perform its obligations under this Agreement;
- (c) this Agreement constitutes a legal and binding obligation on London

- Hydro, enforceable against London Hydro in accordance with its terms;  
and
- (d) any individual signing this Agreement on behalf of London Hydro has been duly authorized by London Hydro to sign this Agreement and has the full power and authority to bind London Hydro.

## **7. Disconnection Device at the Point of Connection**

- 7.1 The Generator shall furnish and install a disconnection switch at the point of connection for the Facility that opens, with a visual break, all ungrounded poles of the connection circuit. The disconnection switch at the point of connection shall be rated for the voltage and fault current requirements of the Facility, and shall meet all applicable CSA standards, ESA requirements, and all other applicable laws. The switch enclosure, if applicable, shall be properly grounded.
- 7.2 The disconnection switch at the point of connection shall be accessible at all times, located for ease of access to the London Hydro personnel, and shall be capable of being locked in the open position. The Generator shall follow London Hydro's procedures for switching, clearance, tagging, and locking.

## **8. Modifications to the Facility**

- 8.1 The Generator shall not modify its connection assets or the Facility except in accordance with this section. Where the modification will not increase the maximum generation electrical output of the Facility, the Generator shall give London Hydro no less than 15 working days notice prior to the date on which the modification will be completed.
- 8.2 Where the modification will increase the maximum generator electrical output of the Facility, the Generator shall submit a new application for connection to London Hydro who shall process that application for connection in accordance with the Code. The Generator shall not commence such modification until that process has been completed.

## **9. Insurance**

- 9.1 Throughout the term of this Agreement, the Generator shall carry commercial general liability insurance for third party bodily injury, personal injury, and property damage in an amount as follows:
  - if the Facility is a Small Embedded Generation Facility (see section 2.1) not less than \$1,000,000 per occurrence and in the annual aggregate
  - if the Facility is a Mid-sized Embedded Generation Facility (see section 2.1) not less than \$2,000,000 per occurrence and in the annual aggregate

Prior to execution of this Agreement, the Generator shall provide London Hydro with a valid certificate of insurance. The Generator shall provide London Hydro with prompt notice of any cancellation of the Generator's insurance by the insurer.

## **10. Liability and Force Majeure**

- 10.1 The liability provisions of section 2.2 of the Code apply to this Agreement and are hereby incorporated by reference into, and form part of, this Agreement.
- 10.2 A Party shall have a duty to mitigate any losses relating to any claim for indemnification from the other Party that may be made in relation to that other Party. Nothing in this section shall require the mitigating Party to mitigate or alleviate the effects of any strike, lockout, restrictive work practice or other labour dispute.
- 10.3 A Party shall give prompt notice to the other Party of any claim with respect to which indemnification is being or may be sought under this Agreement.
- 10.4 The force majeure provisions of section 2.3 of the Code apply to this Agreement and are hereby incorporated by reference into, and form part of, this Agreement.

## **11. Facility Commissioning and Testing**

- 11.1 The Generator shall give London Hydro at least 15 days advance written notice of the date(s) and time(s) on which the Facility will be commissioned and tested prior to connection. The Generator shall give London Hydro the same notice in relation to the commissioning and testing of any material modification to the Generator's connection assets or Facility that occurs after connection.
- 11.2 London Hydro shall have the right to witness the commissioning and testing activities referred to in section 11.1.

## **12. Notice**

- 12.1 Any notice, demand, consent, request or other communication required or permitted to be given or made under or in relation to this Agreement shall be given or made: by courier or other personal form of delivery; by registered mail; by facsimile; or by electronic mail. Notices shall be addressed to the applicable representative of the Party identified in Schedule F.
- 12.2 A notice, demand, consent, request or other communication referred to in section 12.1 shall be deemed to have been made as follows:
  - (a) where given or made by courier or other form of personal delivery, on



- the date of receipt;
- (b) where given or made by registered mail, on the sixth day following the date of mailing;
- (c) where given or made by facsimile, on the day and at the time of transmission as indicated on the sender's facsimile transmission report; and
- (d) where given or made by electronic mail, on the day and at the time when the notice, demand, consent, request or other communication is recorded by the sender's electronic communications system as having been received at the electronic mail destination.

### **13. Access to Facility**

13.1 Each Party shall ensure that its facilities are secured at all times.

13.2 The Generator shall permit and, if the land on which the Facility is located is not owned by Generator, cause such landowner to permit London Hydro's employees and agents to enter the property on which the Facility is located at any reasonable time. Such access shall be provided for the purposes of inspecting and/or testing the Facility as and when permitted by this Agreement, the Code or the London Hydro Conditions of Service or as required to ensure the continued safe and satisfactory operation of the Facility, to ensure the accuracy of London Hydro's meters, to establish work protection, or to perform work.

13.3 Any inspecting and/or testing referred to in section 13.2 shall not relieve the Generator from its obligation to operate and maintain the Facility and any related equipment owned by the Generator in a safe and satisfactory operating condition and in accordance with this Agreement.

13.4 London Hydro shall have the right to witness any testing done by the Generator of the Facility and, to that end, the Generator shall provide London Hydro with at least fifteen working days advance notice of the testing.

13.5 Notwithstanding section 10.1, where London Hydro causes damage to the Generator's property as part of this access, London Hydro shall pay to the Generator the Generator's reasonable costs of repairing such property or, if such property cannot be repaired, replacing such property.

13.6 Notwithstanding section 10.1, if the Generator has been given access to London Hydro's property, and if the Generator causes damage to London Hydro's property as part of that access, the Generator shall pay to London Hydro reasonable costs of repairing such property or, if such property cannot be repaired, replacing such property.

## **14. Disconnection of Facility for System Operations**

- 14.1 If the Generator requests it, London Hydro will provide the Generator with reasonable notice of any planned equipment outages in the Distributor's distribution system that occur on or after the date of the Generator's request which will impact the Facility or its connection.
- 14.2 London Hydro will make reasonable efforts to ensure that the outages referred to in section 14.1 will be of minimal duration and cause minimal inconvenience to the Generator.
- 14.3 In connection with any planned equipment outage, either Party may disconnect or isolate, or require the disconnection or isolation of, its Facility or distribution system (as applicable) from the other Party's Facility or distribution system (as applicable) so that the employees, contractors or agents of either Party may construct, maintain, repair, replace, remove, investigate, inspect or operate its own Facility or distribution system (as applicable) in accordance with the terms of this Agreement and good utility practice.
- 14.4 Where practical, the Generator shall notify London Hydro prior to temporarily isolating or disconnecting the Facility from the London Hydro distribution system.

## **15. Disconnection of Facility for Other Reasons**

- 15.1 The Generator shall discontinue operation of the Facility and London Hydro may isolate or disconnect the Facility from the London Hydro distribution system, upon any of the following:
  - (a) termination of this Agreement in accordance with section 19;
  - (b) if the Generator's connection assets or the Facility are modified by the Generator in a manner contrary to section 8.1;
  - (c) during an emergency or where necessary to prevent or minimize the effects of an emergency;
  - (d) in accordance with section 31, 31.1 or 40(5) of the *Electricity Act, 1998*, other applicable law, the Code, the London Hydro License or the London Hydro Conditions of Service; or
  - (e) where required to comply with a decision or order of an arbitrator or court made or given under Schedule G.
- 15.2 In the event of disconnection under section 15.1(b), the Facility shall remain isolated or disconnected from the London Hydro distribution system until the connection process referred to in section 8.1 has been completed.
- 15.3 In the event of disconnection under section 15.1(c), London Hydro shall reconnect, or permit the reconnection of the Facility to London Hydro's distribution system when it is reasonably satisfied that the emergency has ceased and that all other requirements of this Agreement are met.

15.4 In the event of disconnection under section 15.1(d) or 15.1(e), London Hydro shall reconnect, or permit the reconnection of the Facility to London Hydro's distribution system when London Hydro is reasonably satisfied that the reason for the disconnection no longer exists, the Generator agrees to pay all Board-approved reconnection costs charged by London Hydro, and London Hydro is reasonably satisfied of the following, where applicable:

- (a) the Generator has taken all necessary steps to prevent the circumstances that caused the disconnection from recurring and has delivered binding undertakings to London Hydro that such circumstances shall not recur; and
- (b) any decision or order of a court or arbitrator made or given under Schedule G that requires a Party to take action to ensure that such circumstances shall not recur has been implemented and/or assurances have been given to the satisfaction of the affected Party that such decision or order will be implemented.

15.5 Where the Facility has been isolated or disconnected, each Party shall be entitled to decommission and remove its assets associated with the connection. Each Party shall, for that purpose, ensure that the other Party has all necessary access to its site at all reasonable times.

15.6 The Generator shall continue to pay for distribution services provided up to the time of isolation or disconnection of its Facility.

15.7 The Generator shall pay all reasonable costs including, but not limited to, the costs of removing any of the London Hydro equipment from the Generator's site, that are directly attributable to the isolation or disconnection of the Facility and, where applicable, the subsequent decommissioning of the Facility. London Hydro shall not require the removal of the protection and control wiring on the Generator's site.

15.8 While the Facility is isolated or disconnected, London Hydro shall not be required to convey electricity to or from the Facility.

## **16. Dispute Resolution**

16.1 Any dispute between the Generator and London Hydro arising under, or in relation to this Agreement will be resolved in accordance with Schedule G. The Parties shall comply with the procedure set out in Schedule G before taking any civil or other proceeding in relation to the dispute, provided that nothing shall prevent a Party from seeking urgent or interlocutory relief from a court of competent jurisdiction in the Province of Ontario in relation to any dispute arising under or in relation to this Agreement.

## **17. Amendments**

- 17.1. The Parties may not amend this Agreement without leave of the Board except where and to the extent permitted by this Agreement.
- 17.2. The Parties may by mutual agreement amend this Agreement to reflect changes that may from time to time be made to the Code during the term of this Agreement.
- 17.3. The Parties may by mutual agreement amend any portion of a schedule that was originally to be completed by the Parties.
- 17.4. No amendment made under section 17.2 or 17.3 shall be contrary to or inconsistent with the Code or the remainder of this Agreement.
- 17.5. The Parties shall amend this Agreement in such manner as may be required by the Board.
- 17.6. Any amendment to this Agreement shall be made in writing and duly executed by both Parties.

## **18. Waiver**

- 18.1. A waiver of any default, breach or non-compliance under this Agreement is not effective unless in writing and signed by the Party to be bound by the waiver. The waiver by a Party of any default, breach or non-compliance under this Agreement shall not operate as a waiver of that Party's rights under this Agreement in respect of any continuing or subsequent default, breach or non-compliance, whether of the same or any other nature.

## **19. Term of Agreement and Termination**

- 19.1. This Agreement shall become effective upon execution by the Parties, and shall continue in effect until terminated in accordance with section 19.2 or 19.3.
- 19.2. The Generator may, if it is not then in default under this Agreement, terminate this Agreement at any time by giving London Hydro thirty days prior written notice setting out the termination date.
- 19.3. Except as set out in Schedule H, London Hydro may terminate this Agreement upon any material breach of this Agreement by the Generator (a "Default"), if the Generator fails to remedy the Default within the applicable cure period referred to in section 19.4 after receipt of written notice of the Default from London Hydro.
- 19.4. The Generator shall cure a Default within the applicable cure period specified

in the Code or the London Hydro Conditions of Service. If no such cure period is specified in relation to a given Default, the cure period shall be sixty working days.

19.5 Termination of this Agreement for any reason shall not affect:

- (a) the liabilities of either Party that were incurred or arose under this Agreement prior to the time of termination; or
- (b) the provisions that expressly apply in relation to disconnection of the Generator's facilities following termination of this Agreement.

19.6 Termination of this Agreement for any reason shall be without prejudice to the right of the terminating Party to pursue all legal and equitable remedies that may be available to it including, but not limited to, injunctive relief.

19.7 The rights and remedies set out in this Agreement are not intended to be exclusive but rather are cumulative and are in addition to any other right or remedy otherwise available to a Party at law or in equity. Nothing in this section 19.7 shall be interpreted as affecting the limitations of liability arising from section 10.1 or the obligation of a Party to comply with section 16 while this Agreement is in force.

19.8 Sections 19.5 to 19.7 shall survive termination of this Agreement.

## **20. Exchange and Confidentiality of Information**

20.1 Confidential information in respect of a Party means (i) information disclosed by that Party to the other Party under this Agreement that is in its nature confidential, proprietary or commercially sensitive and (ii) information derived from the information referred to in (i), but excludes the following:

- (a) information that is in the public domain; or
- (b) information that is, at the time of the disclosure, in the possession of the receiving Party, provided that it was lawfully obtained from a person under no obligation of confidence in relation to the information.

20.2 Subject to section 20.3, each Party shall treat all confidential information disclosed to it by the other Party as confidential and shall not, without the written consent of that other Party:

- (a) disclose that confidential information to any other person; or
- (b) use that confidential information for any purpose other than the purpose for which it was disclosed or another applicable purpose contemplated in this Agreement.

Where a Party, with the written consent of the other Party, discloses confidential information of that other Party to another person, the Party shall

take such steps as may be required to ensure that the other person complies with the confidentiality provisions of this Agreement.

20.3 Nothing in section 20.2 shall prevent the disclosure of confidential information:

- (a) where required or permitted under this Agreement, the Code, the Market Rules or the London Hydro License;
- (b) where required by law or regulatory requirements;
- (c) where required by order of a government, government agency, regulatory body or regulatory agency having jurisdiction;
- (d) if required in connection with legal proceedings, arbitration or any expert determination relating to the subject matter of this Agreement, or for the purpose of advising a Party in relation thereto;
- (e) as may be required to enable London Hydro to fulfill its obligations to any reliability organization; or
- (f) as may be required during an emergency or to prevent or minimize the effects of an emergency.

20.4 Notwithstanding section 10.1, a Party that breaches section 20.2 shall be liable to the other Party for any and all losses of the other Party arising out of such breach.

20.5 The Parties agree that the exchange of information, including, but not limited to, confidential information, under this Agreement is necessary for maintaining the reliable operation of London Hydro's distribution system. The Parties further agree that all information, including, but not limited to, confidential information, exchanged between them shall be prepared, given and used in good faith and shall be provided in a timely and cooperative manner.

20.6 Each Party shall provide the other with such information as the other may reasonably require to enable it to perform its obligations under this Agreement.

20.7 Each Party shall, as soon as practicable, notify the other Party upon becoming aware of a material change or error in any information previously disclosed to the other Party under this Agreement and, in the case of the Generator, in any information contained in its Application. The Party shall provide updated or corrected information as required to ensure that information provided to the other Party is up to date and correct.

## **21. Assignment, Successors and Assigns**

21.1 Except as set out in Schedule H, the Generator shall not assign its rights or obligations under this Agreement in whole or in part without the prior written consent of London Hydro, which consent shall not be unreasonably withheld or unduly delayed. London Hydro may withhold its consent to any proposed assignment until the proposed assignee assumes, in writing, all of the

Generator's obligations contained in this Agreement.

21.2 London Hydro shall have the right to assign this Agreement in whole upon written notification to the Generator.

21.3 This Agreement shall be binding upon and enure to the benefit of the Parties and their respective successors and permitted assigns.

**22. Governing Law**

22.1 This Agreement shall be governed by the laws of the Province of Ontario and the federal laws of Canada applicable therein.

**23. Entire Agreement**

23.1 Except as expressly provided herein, this Agreement constitutes the entire agreement between the Parties with respect to the subject-matter hereof and supersedes all prior oral or written representations and agreements of any kind whatsoever with respect to the subject-matter hereof.

**IN WITNESS WHEREOF**, the Parties hereto, intending to be legally bound, have caused this Agreement to be executed by their duly authorized representatives.

**THE CORPORATION OF THE CITY OF LONDON**

PER: \_\_\_\_\_  
Catharine Saunders, City Clerk

\_\_\_\_\_  
Date (dd/mm/yyyy)

PER: \_\_\_\_\_  
Matt Brown, Mayor

\_\_\_\_\_  
Date (dd/mm/yyyy)

We have authority to bind the corporation.

**LONDON HYDRO INC.**

PER: \_\_\_\_\_  
K. P. Walsh, P. Eng., Chief Engineer & VP Operations  
I have authority to bind the corporation.

\_\_\_\_\_  
Date (dd/mm/yyyy)



**SCHEDULE A**

**Application and Connection Cost Agreement (recitals)**

See the attached CIA Application, CIA Summary Report, Offer to Connect Letter and ESA Certificate.

*Attach the Connection Impact Assessment Form filled by the Generator, and any other relevant information with respect to the Generator's application to connect.*



## Connection Impact Assessment Application Form

This Application Form is for Generators applying for a Connection Impact Assessment (CIA). In certain circumstances, London Hydro may require additional information to conduct the Impact Assessment. Should this be the case the Generator will be duly advised.

This Application Form is required for:

- **New** Generators applying for Connection Impact Assessment ("CIA")
- **New** Generators applying for revision to their original Connection Impact Assessment ("CIA")
- **Existing** Generators to verify information related to current connection to the London Hydro system. It is part of the overall Distribution Connection Agreement.

### NOTES:

1. Applicants and generators are cautioned NOT to incur major expenses until London Hydro has completed a Connection Impact Assessment (CIA) study and approval to connect the proposed generation is granted.
2. All fields below are mandatory, except where noted. Incomplete applications may be returned by London Hydro Inc. ("London Hydro").
3. All technical submissions (Connection Impact Assessment, single line diagrams, etc.) must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng.).

Date: 12/11/2014 (dd / mm / yyyy)

Contact Person Name: Steven MacDonald

Signature: 

Application Type:  New CIA Application  CIA Revision/Rework

LDC Name: LONDON HYDRO INC.  
Contact Person: Greg Sheil, P.Eng.  
Mailing Address: 111 Horton Street, P.O. Box 2700  
London, ON, N6A 4H6  
Telephone: 519-861-5800 ext. 5725  
Fax: 519-861-5275  
E-mail: sheila@londonhydro.com



1. Original CIA Project ID# (if applicable): \_\_\_\_\_ Project Name: CGAC - CHP Plant
2. Ontario Power Authority (OPA) Feed-In Tariff (FIT) Contract Number: N/A
3. Project Dates: Proposed Start of Construction: 01/12/2014 (dd/mm/yyyy)  
Proposed In-Service: 31/01/2015 (dd/mm/yyyy)
4. Project Size: Nameplate Capacity 57 kW
5. Project Location: Municipal Address 1045 Wonderland Rd. N. London ON

**6. Project Information:**

Choose a Single Point of Contact:  Owner  Consultant

	Generator (Mandatory)	Owner (Mandatory)	Consultant (Optional)
Company/Person	City of London	City of London	Ameresco
Contact Person	Steven MacDonald	Steven MacDonald	Rob Davidson
Mailing Address Line 1	300 Dufferin Ave.	663 Bathurst St.	23-1100 Dearness Dr.
Mailing Address Line 2	London, ON N6A4L9	London, ON N5Z1P8	London, ON N6E1N9
Telephone	(519) 661-2500	(519) 661-2500 ext 4573	(519) 690-0300
Cell		(226) 268-9652	(519) 719-9042
Fax		(519) 661-5845	(519) 690-1281
E-mail		smacdonald@london.ca	lavidson@ameresco.co

Preferred method of communication with London Hydro:  E-mail  Telephone  Mail  Fax

**7. Customer Status:**

Billing Account Number: 4661428

Customer name registered to this Account: City of London

Are you a HST registrant?  Yes  No

If yes, provide your HST registration number: R119 - 420883 RT \_\_\_\_\_

**8. Fuel Type:**

- Wind Turbine  
 Hydraulic Turbine  
 Steam Turbine  
 Solar/ Photovoltaic  
 Diesel Engine  
 Gas Turbine  
 Fuel Cell  
 Biomass  
 Co-generation/CHP (Combined Heat & Power)  
 Bio-diesel  
 Anaerobic Digester  
 Other (Please Specify) \_\_\_\_\_

**9. Please provide a sketch of your proposed point of connection to London Hydro distribution system.**

Drawing / Sketch No. 214099E1, Rev. 3

**10. Connection to London Hydro's Distribution System (provided in your original IFA):**

a. Proposed connection voltage to London Hydro's distribution system: 27.6 kV

b. Feeder Name: 26M56

c. Hydro One Transformer Station Name: Talbot T.S.

d. GPS coordinates of the connection point 43.0020, -81.3018

e. Fault contribution from Generator's facilities, with the fault location at the PCC:

Three-phase generators: 3-phase short circuit 0.06 MVA;

Single-phase generators: 1-phase short circuit \_\_\_\_\_ MVA...

**11. Single Line Diagram (SLD):**

Provide detailed and updated SLD of the EG facility including the Demarcation Point / Point of Common Coupling ("PCC") to London Hydro's distribution system. This drawing shall include, but not be limited to:

- Electrical equipment at EG's facilities, their principal ratings, impedances, winding configurations, neutral grounding methods, etc.
- Protective relaying, synchronizing and revenue metering arrangements. The device numbers should be in accordance with those adopted in the ANSI / IEEE Standard C37.2 – 1979: *IEEE Standard Electrical Power System Device Function Numbers*.

The SLD shall include the following, as applicable:

- Disconnecting device at the connection point with London Hydro's distribution system
- Load break switches
- Fuses
- Circuit breakers
- Interface step-up transformer
- Intermediate transformer(s)
- CTs and VTs (quantity, location, connection, ratio)
- Generators (rotating / static)
- Power factor correction capacitors and their switching arrangements (particularly for induction units)
- Motors
- Power cables
- Surge arresters
- Any other relevant electrical equipment.

- SLD Drawing Number: 214099 E1 Rev. 3

**12. Generator Characteristics**

**a. Characteristics of Existing Generators**

If Generator's facilities include existing generators, provide details as an attached document.

**b. Characteristics of New Generators:**

**NOTE:**

Please provide the manufacturer's technical data (electrical) for the generator or inverter.

Number of generating unit(s): 3  
Manufacturer / Type or Model No: 57 / EC Power XRG1-19  
Rated capacity of each unit: 19 kW 25 kVA  
If unit outputs are different, please fill in additional sheets to provide the information.  
Rated frequency: 60 Hz  
Rotating Machine Type:  
 Synchronous  Induction  Inverter  Other (Please Specify) \_\_\_\_\_  
(If the machine type is "Other", please provide values equivalent to a Synchronous or Induction type Generator)  
Generator connecting on:  single phase  three phase

Limits of range of reactive power at the machine output:  
i. Lagging (over-excited): 9.2 kVAR power factor 0.9  
ii. Leading (under-excited) N/A kVAR power factor N/A  
Limits of range of reactive power at the PCC:  
iii. Lagging (over-excited): 9.2 kVAR power factor 0.9  
iv. Leading (under-excited) N/A kVAR power factor N/A

Starting inrush current: 3.3 pu (multiple of full load current)

Generator terminal connection:  delta  star

Neutral grounding method of star connected generator:

Solid  Ungrounded  Impedance: R \_\_\_\_\_ ohms X \_\_\_\_\_ ohms

**For Synchronous Units:**

- i. Nominal machine voltage: \_\_\_\_\_ kV
- ii. Minimum power limit for stable operation: \_\_\_\_\_ kW
- iii. Unsaturated reactances on: \_\_\_\_\_ kVA base \_\_\_\_\_ kV base
  - Direct axis subtransient reactance,  $X_d''$  \_\_\_\_\_ pu
  - Direct axis transient reactance,  $X_d'$  \_\_\_\_\_ pu
  - Direct axis synchronous reactance,  $X_d$  \_\_\_\_\_ pu
  - Zero sequence reactance,  $X_0$  \_\_\_\_\_ pu
- iv. Provide a plot of generator capability curve (MW output vs MVAR)  
Document Number: \_\_\_\_\_, Rev. \_\_\_\_\_

**For Induction Units:**

- i. Nominal machine voltage: 0.6 kV
- ii. Unsaturated reactances on: 25 kVA base 0.6 kV base
  - Direct axis subtransient reactance,  $X_d''$  0.30 pu
  - Direct axis transient reactance,  $X_d'$  0.30 pu
- iii. Total power factor correction installed: \_\_\_\_\_ kVAR
  - Number of regulating steps \_\_\_\_\_
  - Power factor correction switched per step \_\_\_\_\_ kVAR
  - Power factor correction capacitors are automatically switched off when generator breaker opens  Yes  No

**For SPC / Inverter type units:**

- i. Terminal voltage \_\_\_\_\_ V
- ii. Line - interactive type (i.e. intended for parallel operation with electric utility)  Yes  No
- iii. Power factor \_\_\_\_\_ p.u.  Yes  No
- iv. Battery backup provided  Yes  No
- v. Maximum fault current for terminal faults \_\_\_\_\_ A
- vi. Standards according to which built \_\_\_\_\_
- vii. Provide Manufacturer's technical brochure and specification sheet \_\_\_\_\_ Doc. No

**13. Interface Step-Up Transformer Characteristics:**

- a. Transformer ownership:  Customer /  London Hydro
- b. Transformer rating: \_\_\_\_\_ kVA
- c. Nominal voltage of high voltage winding: \_\_\_\_\_ kV
- d. Nominal voltage of low voltage winding: \_\_\_\_\_ kV
- e. Transformer type:  single phase  three phase
- f. Impedances on: \_\_\_\_\_ kVA base \_\_\_\_\_ kV base
  - R: \_\_\_\_\_ pu, X: \_\_\_\_\_ pu
  - delta  star
- g. High voltage winding connection:  
Grounding method of star connected high voltage winding neutral:  
 Solid  Ungrounded  Impedance: R: \_\_\_\_\_ ohms X: \_\_\_\_\_ ohms  
Nameplate rating and impedance values of High Voltage Grounding Transformer (If applicable):  
Voltage: \_\_\_\_\_ V Rating: \_\_\_\_\_ KVA R: \_\_\_\_\_ pu X: \_\_\_\_\_ pu

- h. Low voltage winding connection:  delta  star  
 Grounding method of star connected low voltage winding neutral:  
 Solid  Ungrounded  Impedance: R: \_\_\_\_\_ ohms X: \_\_\_\_\_ ohms

**NOTE:**

- The term „High Voltage” refers to the connection voltage to London Hydro’s distribution system and „Low Voltage” refers to the generation or any other intermediate voltage.

**14. Intermediate Transformer Characteristics (if applicable):**

- a. Transformer rating: \_\_\_\_\_ kVA  
 b. Nominal voltage of high voltage winding: \_\_\_\_\_ kV  
 c. Nominal voltage of low voltage winding: \_\_\_\_\_ kV  
 d. Transformer type:  single phase  three phase  
 e. Impedances on: \_\_\_\_\_ kVA base \_\_\_\_\_ kV base  
 R \_\_\_\_\_ pu X \_\_\_\_\_ pu  
 f. High voltage winding connection:  delta  star  
 Grounding method of star connected high voltage winding neutral:  
 Solid  Ungrounded  Impedance: R \_\_\_\_\_ ohms X \_\_\_\_\_ ohms  
 g. Low voltage winding connection:  delta  star  
 Grounding method of star connected low voltage winding neutral:  
 Solid  Ungrounded  Impedance: R \_\_\_\_\_ ohms X \_\_\_\_\_ ohms

**NOTE:** The term „High Voltage” refers to the intermediate voltage that is input to the interface step-up transformer and the „Low Voltage” refers to the generation voltage.

**15. Load information:**

- a. Maximum load of the facility: \_\_\_\_\_ 312 kVA \_\_\_\_\_ 296 kW  
 b. Maximum load current (referred to the nominal voltage at the connection point to London Hydro’s system): \_\_\_\_\_ A  
 c. Maximum inrush current to loads (referred to the nominal voltage at the connection point to London Hydro’s system): \_\_\_\_\_ A

**Attached Documents:**

Item No.	Description	Document No.	No. of Pages
1	Generator Specification Sheet		2
2	Generator Installation Guide		36
3			

**Attached Drawings:**

Item No.	Description	Document No.	No. of Pages
1	Single Line Diagram	214099 E1	1
2	Electrical Power Layout	214099 E2	1
3	New Pump Power Layout	214099 E3	1

**CHECKLIST**

Please ensure the following items are completed prior to submission. The application shall be returned if incomplete:

- Completed form stamped by a Professional Engineer
- Signed Study Agreement along with payment listed in the Study Agreement
- Single Line Diagram (SLD) of the Generator's facilities, must be stamped by a Professional Engineer

**NOTE:**

By submitting a completed CIA application, the Proponent authorizes the collection by London Hydro Inc. ("London Hydro"), of any agreements and any information pertaining to agreements made between the Proponent and the Ontario Power Authority from the Ontario Power Authority, the information set out in the CIA application and otherwise collected in accordance with the terms hereof, the terms of London Hydro's Conditions of Service and the requirements of the Distribution System Code and the use of such information for the purposes of the connection of the generation facility to London Hydro's distribution system.

**Expected Monthly Generation, Consumption and Output From the EG Facility:**

Expected:	Total Generation		Total Internal Consumption		Total Output (to London Hydro's Distribution System)	
	(a)		(b)		(a-b)*	
	kWh	Peak kW	kWh	Peak kW	kWh	Peak kW
January	42408	57	108134	232	-65726	-175
February	38304	57	98323	235	-60019	-178
March	42408	57	113505	229	-71097	-172
April	41040	57	107898	241	-66858	-184
May	42408	57	117453	262	-75045	-205
June	41040	57	126357	281	-85317	-224
July	42408	57	133484	296	-91076	-239
August	41952	57	132965	289	-91013	-232
September	41040	57	126256	248	-85216	-191
October	42408	57	118251	237	-75843	-180
November	41040	57	107786	230	-66746	-173
December	42408	57	110513	232	-68105	-175

\* This value would be negative when the generators are not in operation or when the internal consumption exceeds generation.



# Connection Impact Assessment

## Distributed Generation Project

### CGAC – CHP Plant

Summary Report

Prepared for  
London Hydro

April 20, 2015



Prepared by:  
Meir Klein, P. Eng



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Prepared by:  
Shirley Ann, P. Eng.

# Notice

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## Executive Summary

This report is a summary of a connection impact assessment (CIA) study of a 57 kW generating plant, comprised of three induction generators, proposed to be connected to London Hydro's feeder 26M56 out of Talbot TS.

This study assessed the impact of the generating plant on London Hydro's feeder with regards to a number of specific performance criteria.

The key conclusions of the study are as follows:

1. With the new generators in service, the voltage performance criteria are satisfied.
2. The generators have practically no impact on feeder fault levels or on TOVs.
3. The fault levels at the 27.6 kV bus of Talbot TS, with the generators connected, are below the threshold levels respected by London Hydro and Hydro One.

# 1. Purpose

This report is a summary of a connection impact assessment (CIA) study of a 57 kW generating plant, comprised of three induction generators, proposed to be connected to London Hydro's feeder 26M56 out of Talbot TS.

# 2. Project Description and Summary of Results

Project name: CGAC – CHP Plant  
Developer: City of London  
Location: 1045 Wonderland Rd. N, London, Ontario  
Capacity: 70.5 kVA / 57 kW  
Type: Induction generator  
Generators (3 x 23.5 kVA / 19 kW): EC Power XRGi-19  
Generator voltage: 600 V  
PCC voltage: 600 V

High voltage feeder: 27.6 kV, 26M56 out of Talbot TS  
Existing/committed generation on the feeder: 80 kW PV generator

Source impedance at Talbot TS, 27.6 kV (provided by London Hydro)  
Positive sequence (100 MVA and 27.6 kV base): 0.0050 + j0.1556 pu  
Zero sequence (100 MVA and 27.6 kV base): 0.0062 + j0.3069 pu

The table below summarizes the study findings:

Assessment Criterion	Finding
Impact on voltage	Criterion satisfied
Continuous current rating	Criterion satisfied
Short circuit currents	Criterion satisfied
Temporary overvoltage	Criterion satisfied
Load flow analysis	Criterion satisfied
Transfer trip from Talbot TS	Not required

# 3. Conclusions

The study conclusions are as follows:

1. The connection assessment criteria are satisfied with the new generator.
2. A transfer trip from Talbot TS is not required.
3. Other requirements and connection issues, which are not part of this CIA, will be addressed by London Hydro.

**ALL CIA CRITERIA ARE SATISFIED**



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TOLL FREE FAX: 1-800-667-4278

## Connection Authorization

LONDON HYDRO INC  
111 HORTON ST, PO 2700  
LONDON ON N6A 4H6

NOTICE DATE: August 30, 2008  
NOTIFICATION #: 12477878  
INSPECTOR: Pollock, D Bruce  
TELEPHONE: (519)808-0708  
PRINT DATE: August 30, 2008  
CUSTOMER ID: 12143  
CUST. ORDER #: 008487

**Applicant:**

WILSON & ASSOCIATES CONTRACTING LTD  
453 SPRINGBANK DR  
LONDON ON N6J 1H3

**Applicant Business #:** (519)432-2171

**Re:**

CITY OF LONDON  
AQUATIC CENTRE  
1045 WONDERLAND RD N  
LONDON ON

**Connection Information:**

Connection Type: STANDARD  
Voltage Phase: 347/600 3PH 4 WIRE  
Ampere Rating: 600  
Metering Description: METERING CABINET  
Service Details: RECONNECT  
REPAIRS OF A LEAK



## **SCHEDULE B**

### **Single Line Diagram, Connection Point and Location of Facilities (section 2.3)**

#### **B.1 Single Line Diagram and Connection Point**

*Attach the Single Line Diagram*

#### **B.2 List of Facilities on the Property of the Other Party**

B.2.1 The following facilities of the Generator are located on the property of London Hydro:

*Not applicable*

B.2.2 The following facilities of London Hydro are located in the property of the Generator:

*Communication, data acquisition and disconnection equipment, etc. related to London Hydro operations in regards to this project.*

#### **B.3 Metering Installation Diagram**

*Included in the Single Line Diagram*

Attention: The purpose of this drawing is to show the general arrangement of the system. The contractor is to provide all field wiring per code and manufacturer's specifications.

For the electrical parts shall be CSA APPROVED.  
 COMPLETE THE INSTALLATION OF THE WORK IN ACCORDANCE WITH LATEST EDITION OF THE ONTARIO BUILDING CODE, AND ONTARIO ELECTRICAL SAFETY CODE.  
 ALL WIRE SHALL BE RING COPPER.  
 INSTALL AND WIRE DEVICES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.  
 ELECTRICAL CONTRACTOR TO PROVIDE ALL FIELD WIRING PER CODE AND CABLE SCHEDULE.  
 ELECTRICAL CONTRACTOR TO SUPPLY ALL ELECTRICAL EQUIPMENT AND DEVICES EXCEPT EC POWER EQUIPMENT.  
 BOND ALL ELECTRICAL AND MECHANICAL EQUIPMENT TO GROUND.  
 REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTRUCTIONS FOR DETAILS.

This drawing is not to be used for construction without the manufacturer's instructions.

Rev	Date	By	App

Prints issued to:  
 Production  
 \_\_\_\_\_

Revisions to drawing		Date	
No.	Description	By	Date
1	ISSUED FOR PERMIT		
2	ISSUED FOR PERMIT		
3	ISSUED FOR PERMIT		
4	ISSUED FOR PERMIT		
5	ISSUED FOR PERMIT		

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 Burlington, ON L7M 3J1 905.332.2644

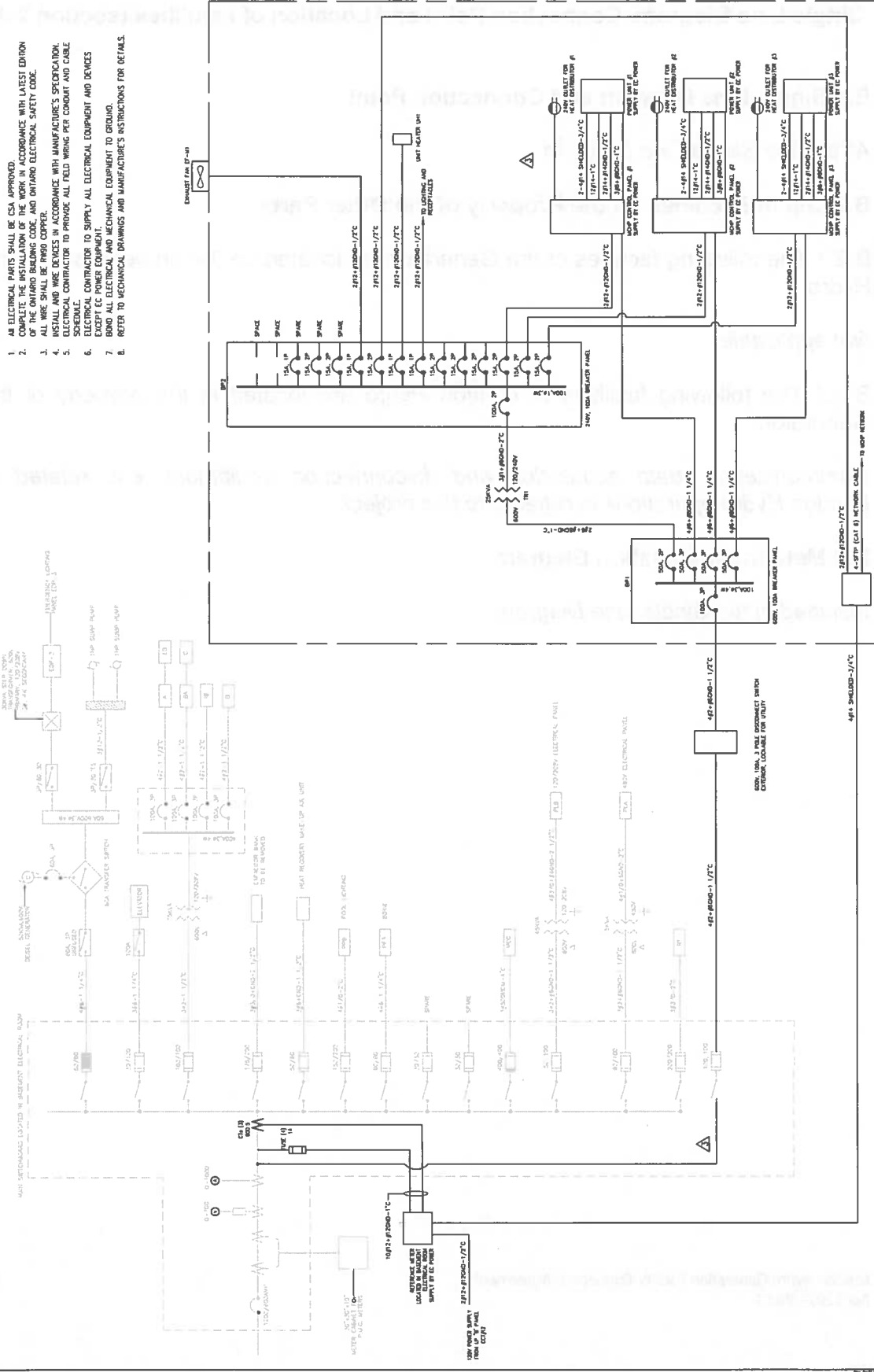
PROFESSIONAL ENGINEER  
 REG. NO. 43826  
 ELECTRICAL

**COGEN**  
 CITY OF LONDON  
 CANADA GAMES AQUATIC CENTRE  
 COGENERATION  
 104 WINDERMERE RD NORTH  
 LONDON ONTARIO

Project No.: #10-214099  
 Date: JUN 2013  
 Drawing No.: COGENERATION SINGLE LINE DIAGRAM E01

**NOTES:**

1. ALL ELECTRICAL PARTS SHALL BE CSA APPROVED.
2. COMPLETE THE INSTALLATION OF THE WORK IN ACCORDANCE WITH LATEST EDITION OF THE ONTARIO BUILDING CODE, AND ONTARIO ELECTRICAL SAFETY CODE.
3. ALL WIRE SHALL BE RING COPPER.
4. INSTALL AND WIRE DEVICES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.
5. ELECTRICAL CONTRACTOR TO PROVIDE ALL FIELD WIRING PER CODE AND CABLE SCHEDULE.
6. ELECTRICAL CONTRACTOR TO SUPPLY ALL ELECTRICAL EQUIPMENT AND DEVICES EXCEPT EC POWER EQUIPMENT.
7. BOND ALL ELECTRICAL AND MECHANICAL EQUIPMENT TO GROUND.
8. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTRUCTIONS FOR DETAILS.



**COGENERATION ADDITION**

**SINGLE LINE DIAGRAM**

## SCHEDULE C

### **List of Other Contracts (section 3.4)**

The following other contracts have been or will be entered into by the Parties:

*[To be completed by the Parties]*



## **SCHEDULE D**

### **Technical and Operating Requirements (section 4.1(d))**

The following technical and operating requirements apply to the Facility:

- D.1 The Generator's generation Facility must not restrict the operation of the London Hydro distribution system.
- D.2 The Generator represents and warrants that an isolation device satisfying Section 84 of the Ontario Electrical Safety Code has been installed, or will be installed prior to the connection of the Generation Facility to London Hydro's distribution system, and the Generator agrees to allow London Hydro's staff access to and operation of this device at all times as required for the maintenance and repair of London Hydro's distribution system.
- D.3 The Generator agrees to perform regular scheduled maintenance on the Generation Facility as outlined by the manufacturer in order to assure that connection devices, protection systems, and control systems are maintained in good working order and in compliance with all applicable laws as amended from time to time.
- D.4 The Generator agrees that during a power outage on London Hydro's distribution system, the Generation Facility will shut down, unless an approved device with transfer and isolating capabilities has been installed at the Generation Facility. The Generator agrees to the automatic disconnection of the Generation Facility from London Hydro's distribution system, as per the generator protective relay settings set out in this Agreement, in the event of a power outage on London Hydro's distribution system or any abnormal operation of London Hydro's distribution system.
- D.5 During day to day operation of London Hydro's distribution system it may be necessary to re-configure the system to restore power or to transfer load as the result of normal operations in order to supply reliable and stable power to London Hydro's load customers. Consequently, London Hydro may transfer the Generation Facility to a different source that cannot accept generation or that may have negative impacts on the London Hydro distribution system. During these situations the Generation Facility may have to shut down or disconnect from the London Hydro distribution system. The Generator agrees that London Hydro shall have the right and the ability to send a blocking signal to either the Generator's inverter or to the Generator's main disconnect to ensure that the Generation Facility does not compromise the reliable operation of the London Hydro distribution system. Once the situation has been rectified to the satisfaction of London Hydro, the blocking signal will be released. Additional equipment may need to be installed, operated and

maintained at the Generation Facility at the Generator's expense. London Hydro reserves the right to confirm through tests and physical inspection on an ongoing basis that the equipment is in a reliable operating condition at the Generator's expense.

- D.6 The Generator is required to provide as a minimum the following metered data to London Hydro's SCADA Master Station: breaker or disconnect status if applicable, inverter lock out status, current, voltage, MW, MVAR and PF. The installation cost and recurring lease costs for a *dial-type* telecommunications circuit will be borne by the Generator. The Generator must arrange for the communications circuit as specified by London Hydro and billing will be settled directly between the Generator and the leased circuit provider. This circuit will also be used to transmit the blocking signal referred to above.
- D.7 In the event of a failure on the blocking signal communications circuit, the Generator must arrange for repair and testing at the Generator's expense. The Generator must inform London Hydro of all work that may impact the operation of the blocking system and London Hydro has the right to test and inspect the operation following any repair to the circuit. The Generator will not be able to connect to the system while the blocking circuit is out of service.
- D.8 In the event of a failure on the dial-type communications circuit that is used by London Hydro's MV-90 metering data collection system, to interrogate the interval-style revenue meters installed within the Generator's substation, London Hydro will notify the Generator, who in turn will carry out or coordinate remedial repairs. The Generator is responsible for all costs related to the maintenance or repair of the leased telephone circuits. If the circuit remains unavailable for a period of more than 2 business days after London Hydro notification of the problem, it may result in London Hydro isolating the Generator's Facility from the London Hydro distribution system until the telecommunication circuit is back on line.
- Note 1: If London Hydro is unable to retrieve revenue-metering data using the telephone line and London Hydro is required to visit the meter location to collect the data using a manual data retrieval system then London Hydro will apply an approved charge to cover such site visits.
- Note 2: Depending on available technology and other factors, the blocking signal communications circuit and the MV90 metering circuit may be one and the same.
- D.9 The design, installation, maintenance, and operation of the Generation Facility will be conducted at all times in a manner that ensures the safety and security of both the Generation Facility and London Hydro's distribution system.
- D.10 The Generator agrees to inform London Hydro immediately of any changes / modifications to the Generation Facility and/or related protection systems.

## Generator Protective Relay Settings

Inverter Utilized:     Yes                       No  
 Inverter Certification:  C22.2 #107.1

**Table 1 – Inverter Based Generation**

The following relay settings shall be used for inverters built to the CSA standard:  
 Source: CSA C22.2 No. 107.1-01 Table 16

System Voltage Vn = V nominal V (Volts)	Frequency F (Hertz)	Maximum number of cycles to disconnect	
		Seconds	Cycle
V < 0.5 Vn	60	0.1	6
0.5 Vn ≤ V < 0.88 Vn	60	2	120
1.10 Vn ≤ V < 1.37 Vn	60	2	120
V > 1.37 Vn	60	0.033	2
Vn	F < 59.5*	0.1	6
Vn	F > 60.5	0.1	6

\*The UL1741 & IEEE P1547 Standards use F < rated-0.7 (i.e. 59.3 Hz).  
 To update if CSA C22.2 No. 107.1-01 is changed

**Table 2 – Non-Inverter Generation**

London Hydro's minimum requirements for other generation are as follows:

System Voltage Vn =V nominal V (Volts)	Frequency F (Hertz)	Maximum clearing time*	
		Seconds	Cycles
V < 0.5 Vn	60	0.16	9.6
0.5 Vn ≤ V < 0.88 Vn	60	2	120
1.10 Vn ≤ V < 1.20 Vn	60	1	60
V ≥ 1.20 Vn	60	0.16	9.6
Vn	F < 59.3	0.16	9.6
Vn	F > 60.5	0.16	9.6

\*Clearing time is the time between the start of the abnormal condition and the Generator ceasing to energize London Hydro's distribution system.

- If the Generator is uncertain about the generation equipment's protective relay settings, please check with the generating equipment supplier.
- Automatic reconnect setting time for the generator is after 5 minutes of normal voltage and frequency on London Hydro's distribution system.

**SCHEDULE E**

**Billing and Settlement Procedures (section 5.3)**

The following provisions apply to the billing and settlement in relation to the Facility:

- I/We do not intend to sell any of the output of the Facility to the Ontario Power Authority or London Hydro and therefore this section does not apply;
- I/We wish to settle under the rules and regulations surrounding the FIT program. My FIT number is \_\_\_\_\_;

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print name: \_\_\_\_\_

**OR**

- I/We wish to participate and settle using the net metering rules under O.Reg 541/05, s. 6. The following form must be signed and executed.

**CUSTOMER REQUEST FORM**

Return to London Hydro (choose any of the following methods):

Mail: P.O. Box 2700, London, Ontario, N6A 4H6  
Attn: Customer Services Department

Deposit: Night Deposit Box at 111 Horton St.  
Fax: (519) 661-5838

**To London Hydro:**

RE: Billing Account Number: \_\_\_\_\_

*I/We the customer account holder wish to request to return eligible electricity to the London Hydro distribution system and be billed on a "net metering" basis under the settlement terms outlined in O.Reg. 541/05.*

**CUSTOMER INFORMATION (please print)**

Name:

\_\_\_\_\_

Current Service Address:

\_\_\_\_\_

Current Mailing Address:

\_\_\_\_\_

Daytime Phone Number: \_\_\_\_\_

Please note retail contract requirements:

- a) Customers under current or future contract with a retailer and billed under the bill-ready form of distributor-consolidated billing pursuant to the Retail Settlement Code must have their retailer send confirmation to London Hydro that the Customer and retailer have an agreement that allows the Customer to return eligible electricity to the retailer for the purpose of being billed on a net metering basis O.Reg 541/05, s. 6.

If either your account is currently with a retailer or you enter into contract with a retailer in the future, London Hydro will only offer the "net meter" billing upon receipt of the required retailer confirmation. Please contact your retailer to have the necessary confirmation forwarded to our offices marked Attn: Retailer Settlements.

- b) Customers either under current or future contract with a retailer under retailer consolidated billing will not be or no longer be eligible for the "net meter" billing, as they are not mentioned in O.Reg. 541/05, s. 6.

The above a) is not a requirement if you are currently not under contract with any retailer and billed under the London Hydro "Standard Supply Service". Consent may be cancelled by the Customer at anytime by giving 90 days notice to London Hydro, O.Reg. 541/05 s. 9.

I agree that London Hydro will process my request on the next scheduled reading date once all connection agreements, metering, eligibility determination and retailer confirmation a) requirements are completed.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print name: \_\_\_\_\_

Requests will not be completed without the signature of the Customer who is financially responsible for the account.

## **SCHEDULE F**

### **Contacts for Notice (section 12.1)**

#### **Telephone Contact Information**

<b>London Hydro Inc.</b>		
•	System Operator (routine)	519-661-5800 Ext. 5585
•	System Operator (emergency)	519-661-0480
•	Operations Supervisor (Rolf Reiners)	519-661-5800 Ext. 5450
•	Distribution Engineer (Cole Tavener)	519-661-5800 Ext. 5724
•		
•	Normal business hours contact	
•	After hours contact	
•		
•		

## SCHEDULE G

### Dispute Resolution (section 16.1)

- G.1 The Party claiming a dispute will provide written notice to the other Party. The Parties will make reasonable efforts through or by their respective senior executives to resolve any dispute within sixty days of receipt of such notice.
- G.2 If a dispute is settled by the senior executives of the Parties, the Parties shall prepare and execute minutes setting forth the terms of the settlement. Such terms shall bind the Parties. The subject-matter of the dispute shall not thereafter be the subject of any civil or other proceeding, other than in relation to the enforcement of the terms of the settlement. If a Party fails to comply with the terms of settlement, the other Party may submit the matter to arbitration under section G.3. A copy of the minutes referred to in this section from which all confidential information has been expunged shall be made available to the public by London Hydro upon request.
- G.3 If the senior executives of the Parties cannot resolve the dispute within the time period set out in section G.1 or such longer or shorter period as the Parties may agree, either Party may submit the dispute to binding arbitration under sections G.4 to G.8 by notice to the other Party.
- G.4 The Parties shall use good faith efforts to appoint a single arbitrator for purposes of the arbitration of the dispute. If the Parties fail to agree upon a single arbitrator within ten working days of the date of the notice referred to in section G.3, each Party shall within five working days thereafter choose one arbitrator. The two arbitrators so chosen shall within fifteen working days select a third arbitrator.
- G.5 Where a Party has failed to choose an arbitrator under section G.4 within the time allowed, the other Party may apply to a court to appoint a single arbitrator to resolve the dispute.
- G.6 A person may be appointed as an arbitrator if that person:
- (a) is independent of the Parties;
  - (b) has no current or past substantial business or financial relationship with either Party, except for prior arbitration; and
  - (c) is qualified by education or experience to resolve the dispute.
- G.7 The arbitrator(s) shall provide each of the Parties with an opportunity to be heard orally and/or in writing, as may be appropriate to the nature of the dispute.
- G.8 The *Arbitration Act, 1991* (Ontario) shall apply to an arbitration conducted under this Schedule G.
- G.9 The decision of the arbitrator(s) shall be final and binding on the Parties and may be enforced in accordance with the provisions of the *Arbitration Act, 1991* (Ontario). The Party against which the decision is enforced shall bear all

costs and expenses reasonably incurred by the other Party in enforcing the decision.

- G.10 A copy of the decision of the arbitrator(s) from which any confidential information has been expunged shall be made available to the public by London Hydro upon request.
- G.11 Subject to section G.12, each Party shall be responsible for its own costs and expenses incurred in the arbitration of a dispute and for the costs and expenses of the arbitrator(s) if appointed to resolve the dispute.
- G.12 The arbitrator(s) may, if the arbitrator(s) consider it just and reasonable to do so, make an award of costs against or in favour of a Party to the dispute. Such an award of costs may relate to either or both the costs and expenses of the arbitrator(s) and the costs and expenses of the Parties to the dispute.
- G.13 If a dispute is settled by the Parties during the course of an arbitration, the Parties shall prepare and execute minutes setting forth the terms of the settlement. Such terms shall bind the Parties, and either Party may request that the arbitrator(s) record the settlement in the form of an award under section 36 of the *Arbitration Act, 1991* (Ontario). The subject-matter of the dispute shall not thereafter be the subject of any civil or other proceeding, other than in relation to the enforcement of the terms of the settlement.
- G.14 If a Party fails to comply with the terms of settlement referred to in section G.13, the other Party may submit the matter to arbitration under section G.3 if the settlement has not been recorded in the form of an award under section 36 of the *Arbitration Act, 1991* (Ontario).
- G.15. A copy of the minutes referred to in section G.13 from which all confidential information has been expunged shall be made available to the public by London Hydro upon request.
- G.16 The Parties may not, by means of the settlement of a dispute under section G.2 or section G.13, agree to terms or conditions that are inconsistent with or contrary to the Code or this Agreement.



## **SCHEDULE H**

### **Provisions Applicable if Facility Financed by a Lender** (sections 19.3, 20.3 and 21.1)

- H.1 For the purposes of this Schedule, "lender" means a bank or other entity whose principal business is that of a financial institution and that is financing or refinancing the Facility.
- H.2 Where notice of a Default has been served on the Generator under section 19.3, an agent or trustee for and on behalf of a lender ("Security Trustee") or a receiver appointed by the Security Trustee ("Receiver") shall upon notice to London Hydro be entitled (but not obligated) to exercise all of the rights and obligations of the Generator under this Agreement and shall be entitled to remedy the Default specified in the notice within the applicable cure period referred to in section 19.4. London Hydro shall accept performance of the Generator's obligations under this Agreement by the Security Trustee or Receiver in lieu of the Generator's performance of such obligations, and will not exercise any right to terminate this Agreement under section 19.3 due to a Default if the Security Trustee, its nominee or transferee, or the Receiver acknowledges its intention to be bound by the terms of this Agreement and such acknowledgment is received within 30 days of the date of receipt by the Generator of the notice of Default.
- H.3 The Generator may, without the prior written consent of London Hydro, assign by way of security only all or any part of its rights or obligations under this Agreement to a lender. The Generator shall promptly notify London Hydro upon making any such assignment.
- H.4 The Generator may disclose confidential information of London Hydro to a lender or a prospective lender.