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<b>TO:</b>	<b>CHAIR AND MEMBERS COMMUNITY AND PROTECTIVE SERVICES COMMITTEE MAY 25, 2016</b>
<b>FROM:</b>	<b>MARTIN HAYWARD MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER</b>
<b>SUBJECT:</b>	<b>BY-LAW FOR THE EXECUTION OF THE CONNECTION AGREEMENT WITH LONDON HYDRO FOR A LOAD DISPLACEMENT GENERATOR AT THE CANADA GAMES AQUATIC CENTRE</b>

<b>RECOMMENDATIONS</b>
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That, on the recommendation of the Managing Director, Corporate Services and City Treasurer, Chief Financial Officer, the following action be taken with respect to the agreement between London Hydro and The Corporation of the City of London as it relates to the operation of a electricity generation system located at the Canada Games Aquatic Centre and connected to London Hydro’s distribution network:

- (a) That the attached by-law **BE INTRODUCED** at the Municipal Council meeting of May 31, 2016 to authorize the Mayor and City Clerk to execute the London Hydro Form of Connection Agreement for a Small or a Mid-sized Embedded Generation Facility between London Hydro and The Corporation of the City of London.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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Relevant reports that can be found at [www.london.ca](http://www.london.ca) under City Hall (meetings) include:

- Single Source 2013 Facility Renewal and Energy Retrofit Program Phase IV (June 18, 2013 meeting of the Corporate Services Committee, Agenda Item #2)

<b>BACKGROUND</b>
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**Purpose**

The purpose of this report is to introduce the Form of Connection Agreement for a Small or a Mid-sized Embedded Generation Facility (Agreement) between London Hydro and the City of London (see Schedule A) and to request a resolution and by-law (see Appendix A) from Council to allow the Mayor and Clerk to act on behalf of the City and sign the Agreement.

**Context**

On June 25, 2013, City Council provided final approval for the scope of work for the 2013 Facility Renewal and Energy Retrofit Program Phase IV project at the Canada Games Aquatic Centre (CGAC). The scope of the project included the installation combined heat and power system (CHP) which is connected to London Hydro’s distribution grid by virtue of it being embedded within the Canada Games Aquatic Centre’s electrical system.

**Discussion**

A CHP (also commonly referred to as a co-generation system) is a system that converts the energy stored in a fuel source into a combination of electricity and useable heat. CHPs are suitable for facilities which have constant coincident thermal and electrical loads. Heated pools are natural candidates for CHPs since they have a constant need for pumping (normally provided via electric motors) as well as a constant need for heat (normally provided via boilers).

The CHP at CGAC uses natural gas as its fuel source and is designed to displace a portion of the electrical base load of the facility while also offsetting a portion of the heating base load of the facility. In order for the CHP to displace these thermal and electrical base loads, it is

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interconnected with both the hot water heating and electrical systems within the facility. The interconnection between the CHP and the facility’s electrical system, which is in turn connected to London Hydro’s distribution network, means the CHP is classified as a grid-connected embedded generator. It has this classification despite being sized and designed to never send power to the grid itself.

As part of its mandate as a local distribution company, London Hydro safely and reliably delivers electricity to customers in the City of London. The connection of any generation system to London Hydro’s distribution network must be reviewed by and operation of such a system must be approved by London Hydro. Part of this review and approval process includes the requirement that the City of London, as a generator, enter into a connection agreement with London Hydro.

Highlights of the CHP installed at the Canada Games Aquatic Centre include:

- Projected annual electricity generation: 465,000 kWh (31% of annual usage)
- Projected average demand displacement: 53 kW (34% of average demand)
- Projected annual thermal energy converted: 3,400 GJ (43% of annual need)
- Projected annual cost avoidance: \$21,000 (based on 2014 rates)
- Approved saveONenergy incentive value: \$93,000

**Conclusion:**

The lifecycle renewal and energy retrofit project at the CGAC included the installation of a CHP and the final approval for the operation of the system is subject to the City of London entering into the attached Agreement. The operation of the CHP will result in cost avoidance and the CHP measure itself attracted a significant portion of the total value saveONenergy incentives approved for the overall project.

This report requests a resolution and by-law from Council to allow the Mayor and Clerk to act on behalf of the City and execute the Agreement with London Hydro.

**ACKNOWLEDGEMENTS**

This report was prepared with the assistance of David Munteer, Assistant City Solicitor, City Solicitors Office and Jason Wills, Manager III, Risk Management.

<b>PREPARED BY:</b>	<b>SUBMITTED BY:</b>
<b>STEVEN MACDONALD CORPORATE ENERGY MANAGEMENT ENGINEER, FACILITIES</b>	<b>JIM KLINGENBERGER MANAGER, FACILITIES ASSETS, ENERGY &amp; RELIABILITY</b>
<b>REVIEWED BY:</b>	<b>RECOMMENDED BY:</b>
<b>TIM WELLHAUSER DIVISION MANAGER, FACILITIES</b>	<b>MARTIN HAYWARD MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER</b>

Appendix A: Proposed By-Law to approve the Execution of the London Hydro Form of Connection Agreement for a Small or a Mid-sized Embedded Generation Facility between London Hydro and The Corporation of the City of London

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Schedule A: London Hydro Form of Connection Agreement for a Small or a Mid-sized Embedded Generation Facility

cc: Bill Coxhead, Managing Director - Parks and Recreation  
Bill Milroy, Chief Engineer & VP Operations, London Hydro  
David Mounteer, Assistant City Solicitor, City Solicitors Office  
Jason Wills, Manager III, Risk Management



**APPENDIX A**

Bill No.

By-law No.

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 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.
3. 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 -  
Second reading -  
Third reading –

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**SCHEDULE A**

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