



STAFF REPORT ACTION REQUIRED

Electricity Demand Response for City Facilities

Date:	February 2, 2016
To:	Parks and Environment Committee
From:	Chief Corporate Officer
Wards:	All
Reference Number:	P:\2016\Internal Services\E&E\Pe16002e&e (AFS #22278)

SUMMARY

This report seeks approval to continue the City's participation in the Province's Demand Response (DR) Program beyond August 8, 2016. The Demand Response program is the coordinated reduction of electricity consumption by end-users to help balance province-wide peak demand and supply capabilities during periods when electricity is constrained as determined by Independent Electricity System Operator (IESO). Financial incentives are available to electricity end-users for the commitment to decrease non-essential loads or the provision of generators to reduce electricity demand during peak periods.

Demand Response participation has generated substantial new net revenue for the City and has created an effective investment mechanism to enable City of Toronto Agencies, Corporations and Divisions to recover costs associated with natural gas stand-by generator installations. Investing in resiliency for City assets enables continuous operation for cooling/heating centres throughout prolonged power outages. The City currently has 6.79 MW and twenty-two (22) sites enrolled in Demand Response, with 2015 estimated annual revenues of \$400,000.

The current agreement for the provision of services allowing the participation of the City in the provincial Demand Response Program expires in August 2016 and requires approval to continue beyond August 2016.

RECOMMENDATIONS

The Chief Corporate Officer Recommends that:

1. City Council authorize the Chief Corporate Officer on behalf of the City to continue participation in Demand Response and demand-supply/energy successor programs sponsored by the Independent Electricity System Operator, consistent with the Province's [Long Term Energy Plan \(2013\)](#).
2. City Council authorize the Chief Corporate Officer to approve the extension of the Demand Response Agreement with its aggregator, Rodan Energy Solutions Inc. from August 8, 2016 to April 2018 to ensure that projects enrolled with Rodan as of August 8, 2016 will continue to receive all available monthly payments from the Independent Electricity System Operator.
3. City Council authorize the Director of the Environment and Energy Division in conjunction with the Director of Purchasing and Materials Management to engage one or more Demand Response aggregators through a competitive process to coordinate participation as may be required, for future Demand Response and demand-supply/energy successor programs, over the period 2015-2025 consistent with the Province's Long Term Energy Plan 2013.
4. City Council authorize the Director of the Environment and Energy Division to evaluate Demand Response projects of City Agencies, Corporations and Divisions and enroll/allocate the administration of projects to third-party professional and technical service providers or to the Environment and Energy Division, on behalf of City staff.
5. City Council authorize the Director of the Environment and Energy Division to evaluate any generator installation (new and/or existing assets) that is being considered by City Agencies, Corporations and Divisions for its viability and appropriateness for the Demand Response Program.
6. City Council forward this report to the Board of Directors of Toronto Hydro in consideration of the [Toronto Integrated Regional Resource Plan \(2011-2036\)](#) and the ongoing collaboration being planned for its Local Advisory Committee over the period 2015-2019.

Financial Impact

Since the commencement of the City's participation in the Demand Response program in 2012, the total estimated revenues earned by the City has exceed \$1,100,000 through 2015. Projected Demand Response revenues from 2016 to 2018 may exceed \$1,000,000 in cumulative revenues for a total of \$2,100,000 to be paid by the Independent Electricity System Operator (IESO).

The 2016-2025 Preliminary Capital Budget and Plan for Facilities, Real Estate, Environment & Energy (FREEE) includes \$16.885 million, funded by recoverable debt, dedicated to support Conservation and Demand Management projects including Demand Response.

Demand Response enablement costs can be sourced through the Sustainable Energy Plan –Financing. Estimated costs as well as any additional funding for measurement and verification and/or program management will be included in the 2016-2025 Preliminary Capital Budget and Plan for FREEE. Revenues generated from reducing electricity demand during peak periods will also be reflected in the 2016 Preliminary Operating Budget to repay the recoverable debt.

The Deputy City Manager & Chief Financial Officer have reviewed this report and agree with the financial impact information.

DECISION HISTORY

On November 30, December 1, 2, 4 and 7, 2009, City Council adopted report “The Power to Live Green: Toronto’s Sustainable Energy Strategy”.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.EX36.9>

On August 25, 26 and 27, 2010, City Council adopted report "Enrolment of Union Station Stand-by Generators in the Ontario Power Authority Demand Response 3 Program".

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2010.EX46.68>

On November 13, 14, 15 and 18, 2013, City Council adopted "The Environment and Energy Division 5-Year Business Plan (2014-18)".

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.PE23.4>

On July 8, 9, 10 and 11, 2014, City Council adopted report "Resilient City - Preparing for a Changing Climate."

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.PE28.6>

ISSUE BACKGROUND

In 2011, Rodan Energy Solutions Inc. was the successful proponent engaged through a Request for Proposal process to act as the City’s Demand Response aggregator and facilitate City participation in the Independent Electricity System Operator’s Demand Response programs.

The City of Toronto has successfully enrolled twenty-two (22) projects for a total of 6.79 MW from City Agencies, Corporations and Divisions which include Toronto Water, TCHC, Parks, Forestry and Recreation, Exhibition Place, and Facilities Management. The total revenue paid by the Independent Electricity System Operator to the City for participation in Demand Response has exceeded \$1,100,000 through 2015.

The current agreement with the aggregator (Rodan Energy Solutions Inc.) will expire on August 8, 2016. To ensure continuity of Demand Response revenues for projects enrolled with Rodan Energy Services Inc. as of August 8, 2016 the City needs to extend the existing agreement. The City will also need to engage one or more Demand Response aggregators through a competitive process for future DR opportunities.

COMMENTS

Ontario's 2013 Long Term Energy Plan outlines the use of Demand Response to meet 10% of peak demand by 2025, equivalent to approximately 2,400 Megawatts (MW) under forecast conditions. To encourage further development of Demand Response in Ontario, the Independent Electricity System Operator will evolve existing Demand Response programs and introduce new Demand Response initiatives.

The City has participated in the Province's Demand Response Program since 2012. Staff from the Environment and Energy Division continue to develop a pipeline of potential Demand Response projects from City Agencies, Corporations and Divisions. These pipeline projects include investments in new resilient natural gas stand-by generators, made in response to climate change and extreme weather conditions as well as, the State of Good Repair Program (SOGR). Upon completion, these projects may be enrolled in the Independent Electricity System Operator Demand Response program and may create new revenue streams.

An extension of the City's agreement with Rodan Energy Solutions Inc. is necessary to ensure continuity of Demand Response revenues for projects enrolled with Rodan Energy Services Inc. as of August 8, 2016. The City will also need to engage one or more Demand Response aggregators through a competitive process for future DR opportunities.

Demand Response Program Options:

Currently the Independent Electricity System Operator has three Demand Response Program offerings for City participation:

1. Capacity Based Demand Response Program

Currently all City Demand Response participants are enrolled through Rodan Energy Solutions Inc. in the Capacity Based Demand Response Program (CBDR) Program. The City has been offered the opportunity to extend the Capacity Based Demand Response Program projects to the program expiry date of April 2018. Rodan Energy Solutions Inc. is the only aggregator with the ability to extend the City's participation in the Capacity Based Demand Response Program.

2. Demand Response Pilot Program

The Independent Electricity System Operator has introduced the Demand Response Pilot Program, which will begin implementation and delivery May 2016. Rodan Energy Solutions Inc. was the only successful aggregator with the ability to accept new City enrolments. Rodan Energy Solutions Inc. has offered the City the opportunity to continue our participation through April 2018.

3. Demand Response Auction Program

The Independent Electricity System Operator has developed a Demand Response Auction process which is designed to procure new Demand Response projects for 2016. Future auction results will guide how the City will participate in the 2016 Demand Response Auction Program.

The City's enrolment options would be evaluated in consideration of the Independent Electricity System Operator program timelines for Demand Response program participation. The Director of the Environment and Energy Division will evaluate Demand Response projects of City Agencies, Corporations and Divisions and enroll/allocate the administration of projects to third-party professional and technical service providers or to the Environment and Energy Division, on behalf of City staff.

CONTACT

Jim Baxter, P. Eng., Director
Director
Environment & Energy Division
Tel: 416-338-1295
Email: jbaxter2@toronto.ca

Richard Morris, Manager
Energy Efficiency Office
Environmental & Energy Division
Tel: 416-392-1452
Email: rmorris@toronto.ca

SIGNATURE

Josie Scioli
Chief Corporate Officer