



Exhibition Place

May 10, 2012

To: Board of Governors of Exhibition Place

From: Dianne Young, CEO

Subject: **Distributed Energy System at Exhibition Place**

Summary:

A distributed energy system is one where a centralized heating and/or cooling and electricity generation service supplies more than one customer. The Energy Efficiency Office in the Facilities Management Division of the City of Toronto recently completed a study of distributed energy system opportunities across the City including at Exhibition Place. Because Exhibition Place has existing energy generation assets on site (trigeneration, steam boilers, back-pressure steam turbine and chillers), the City study concluded that significant financial and operational benefits could be obtained by connecting these facilities to significantly improve operational efficiency to the extent where it becomes feasible to sell excess energy capacity to the HKH hotel development.

The hotel developer (Princes Gates Hotel LP) is on a timeline to obtain building permits in 2012, start construction in January 2013, and complete construction of the facility in time for the Pan Am games in 2015. Exhibition Place staff, along with City staff and the City's consultant, met with the hotel developer to outline the proposed distributed energy system and received a very positive response from the HKH. The hotel development presently has designed a stand-alone heating/ cooling/ hot water system but is prepared to revise the building's design to source heating, cooling, water heating and electricity from the proposed Exhibition Place distributed energy system. However, since the revision of the design would be a cost to HKH, it is looking for some assurance that the project will be supported by the Board/City.

Because of the very tight timelines to complete detailed design for the hotel to ensure excavation in January 2013, the intent would be for Exhibition Place staff to work closely with City staff to develop the substantial terms and conditions of an agreement, especially the financial terms. The capital cost of project (ie the cost of connecting the existing Exhibition Place stand-alone generators together and then connecting the system to the hotel) would be a new capital project initially funded by the City. The intent would be that the 2012-2021 Approved Capital Budget and Plan for the Sustainable Energy Program of the City would be increased by \$4.5 million gross, \$0 net, funded from recoverable debt with a nominal interest

Recommendations:

It is recommended that the Board:

- 1) Authorize the CEO to work with the Deputy City Manager and Chief Financial Officer to enter into negotiations for an agreement between the City, Exhibition Place, and Princes Gate Hotel LP for the Exhibition Place Distributed Energy Project and report directly to Council provided that no terms in the agreement will have any negative financial impact on the Board in 2012 or future years; and,**

- 2) **Direct that the confidential information contained in Confidential Attachment 1 to this report not be released publicly in order to protect the competitive position and future economic interests of Exhibition Place and the City.**

Financial Impact:

Funding in the amount of \$4.5 million will be required to implement a distributed energy system at Exhibition Place. The full investment will be recovered from a combination of electricity cost savings at Exhibition Place and the generation and sale of energy to Princes Gate Hotel LP - net of additional operating expenses.

Decision History:

In 2004, the Board approved an Environmental Plan which had as its mandate net energy self-sufficiency. The Exhibition Place 2009 – 2012 Strategic Plan had an Environmental Goal *To exemplify and demonstrate environmental stewardship and leadership in all aspects of our businesses and operations* and as a Strategy to support this Goal we will *reduce the impact of our operations/business on all aspects of the environment*.

Issue Background:

The development of a distributed energy system at Exhibition Place has the potential of resulting in significant financial benefits to Exhibition Place and the City and also significant greenhouse gas reductions. However, the opportunity to move in this direction is very limited given the necessity to have the hotel project as a major component of the system and the timelines required by HKH to meet the schedule as set out in the legal agreement.

Comments:

As part of the 2011 Capital Budget for the City's Sustainable Energy Program, there was funding for Distributed Energy Business Case Study. FVB Energy Inc. was retained by the City to provide professional and technical services to develop a detailed and comprehensive business case for each of three priority Distributed Energy Node opportunities in the City. Exhibition Place is one of the identified priority locations for a proposed distributed energy system as a result of the study's findings, conclusions, and recommendations. The FVB report concluded there were very positive financial returns based on energy savings to Exhibition Place and energy sales to the hotel development.

The proposed distributed energy project at Exhibition Place will connect two existing isolated energy plants; the steam plant at the Coliseum Complex and the heating/cooling/cogeneration plant at the Direct Energy Centre. The interconnected plants will not only have enough heating and cooling capacity to supply the four existing event facilities (Ricoch Coliseum, Coliseum Complex, Direct Energy Centre, and Allstream Centre), but will also be able to provide cold water for air conditioning and hot water for space heating to sell to the new hotel development. Electricity sales to the hotel will also be negotiated.

The proposed distributed energy system connections have the potential to offer Exhibition Place a new source of net revenues from energy sales to the hotel. Another significant result is the ability of Exhibition Place to supply more of its own electricity needs at the site from existing systems, significantly reducing the cost of electricity purchases.

As noted above, sale of energy to the hotel development is crucial to the financial returns from this project. However, the window of opportunity to amend the hotel design plans to incorporate connection to the external distributed energy supply requires a decision now on whether or not to proceed.

Exhibition Place staff are recommending that they work with the Energy Efficiency Office staff of the City of Toronto to develop the project based on a energy services agreement with Princess Gate Hotel that would include the following terms :

- a) Establishing base line metrics for performance measurement purposes including current system performance, operational and utilization efficiency, historical billing and other costs;
- b) Negotiating energy supply agreement terms and conditions including capacity and consumption charges;
- c) Establishing appropriate operating and maintenance agreements including measurement and verification, as well as back-up power contingencies; and
- d) Other relevant business arrangements such as timing, ownership/lease structure, and repayment schedules.

Benefits

The proposed project is expected to provide financial returns to the Board/City through significantly lower energy bills and a more highly efficient energy infrastructure and plant. Furthermore, Exhibition Place's goal to achieve energy self-sufficiency would be achieved with this project. This project would create a significant reduction in CO2 emissions. In addition, the project contributes toward improved energy security in the area, reducing demands on the local electricity grid and ancillary electrical equipment and to the City's Sustainable Energy Plan. Finally, the project could potentially free up local electricity capacity for new development in the area.

This project could be a catalyst for a multi-phase larger vision for distributed energy system at Exhibition Place, supplying energy to its on-site new development, and supplying the heating and cooling energy needs of off-site new development in the general area such as the potential Ontario Place redevelopment.

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Submitted by:

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