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EXHIBITION PLACE

September 13, 2004

To: The Board of Governors of Exhibition Place

From: Dianne Young
General Manager & CEO

Subject: **Proposed Photovoltaic Project**

Recommendation(s):

It is recommended that the Board receive this report for its information.

Background:

At its meeting in May, 2004, the Board adopted an Environmental Plan for Exhibition Place which had as its objective the achievement of energy self-sufficiency by 2010.

Discussion:

Exhibition Place was approached by the Toronto Atmospheric Fund and the City of Toronto Energy Efficiency Office (EEO) to participate in a Solar Photovoltaic project at Exhibition Place at a cost of approximately \$500,000.00. The first step in the process was to present the proposal to a City of Toronto staff team coordinating applications to the Federation of Canadian Municipalities (FCM) which was approved the City CAO in the summer, 2004 and an Intent to Apply submitted to FCM. FCM has now approved of the Intent to Apply for this project and requested that the Board submit a formal application in the amount of \$250,000.00. In addition, TAF, our partner in this project will be seeking a grant of \$250,000 from its Board.

The Pilot Solar Photovoltaic Power Generation Plant would result in the installation of a 50-100 kilowatt (KW) solar cells on the roof of the Horse Palace as a demonstration project with the intent to eventually install a 1 - 2 megawatt (MW) generation plant on the grounds of Exhibition Place. A 1-2 megawatt (MW) PV generation plant would be the largest in Canada, although competing with some of the largest in the world in USA and Germany.

The intent of the project is to investigate, install, test, and evaluate one or more types of photovoltaic systems and use the results of the pilot to design a larger system. The Horse Palace is an ideal site as it has an existing flat roof of over 130,000 sq.ft. (12,000 sq.m.) which is fully exposed to sunlight, having no adjacent buildings close enough to cause any shadows over the PV installation. The roof structure has the potential to accommodate a solar PV array of up to 1.9 MW in capacity.

The photovoltaic plant will be integrated with two other generation projects at Exhibition Place involving a wind turbine and the trigeneration plant, thereby creating a distributed energy system that enhances the energy security of Exhibition Place—its exhibitions, public attendance, and revenues which are extremely vulnerable to power outages, while mitigating electricity distribution constraints that exist in downtown Toronto.

This photovoltaic initiative has three phases: Phase 1: Planning Grant —Solar cells and arrays presently or soon to be available in Canada will be investigated; engineering requirements for installation of the pilot of the Horse Palace roof will be developed; Phase 2: Field Test Grant — Contracts will be let with the firms chosen to provide and install the the respective PV arrays, and additional financing will be sought, if necessary; Phase 3: Feasibility Study Grant — A consulting firm will be engaged to monitor, test, and evaluate the performance of the arrays under a variety of weather and irradiance conditions. Performance will be measured over one year and all four seasons, and the feasibility and cost of a large 1 - 2 MW system will be assessed.

The timelines for this project are still preliminary, however, Exhibition Place staff along with its partners, plan to complete the FCM application and submit it by November, 2004 and receive approval of the loan from the board of directors of TAF before the end of 2004. Past experience indicates that FCM approval can take at least six (6) months which would mean moving to the implementation stage of the project either in the summer or fall, 2005.

Conclusion:

This report outlines the preliminary details of the Pilot Solar Photovoltaic Power Generation Plant proposed for Exhibition Place. Staff are presently drafting the formal FCM grant application along with out partners, TAF and EEO and will report back to the Board on the results of that application.

Contact:

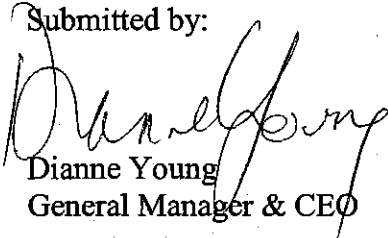
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Submitted by:



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