



STAFF REPORT ACTION REQUIRED

Toronto Energy Plan – Update and Related Initiatives

Date:	March 7, 2007
To:	Executive Committee
From:	Chief Corporate Officer
Wards:	All
Reference Number:	P:\2007\Internal Services\F&RE\ec07005F&RE - AFS#2102.

SUMMARY

This report provides an update on the preparation of the Toronto Energy Plan, including the development of a program to achieve 90 megawatts (MW) of electricity savings across the city by 2010. Under this program, the Ontario Power Authority (OPA) will provide incentive payments to eligible City and community projects. The report also identifies three other issues:

- the proposed linking of Police Headquarters and City Hall to Enwave's Deep Lake Water Cooling system;
- the proposed construction of a 3rd major electricity transmission line into the downtown; and
- opportunities for cooperation with the federal government on energy efficiency.

In the short term, the recommendations in this report will help the City achieve its target of reducing energy consumption by 15% within its own operations, as well as reducing electricity consumption in the wider community. The recommendations will also assist in developing a longer-term plan for moving Toronto from its current unsustainable state of energy consumption to a state of energy sustainability, through energy conservation and the generation of clean and renewable energy.

RECOMMENDATIONS

The Chief Corporate Officer recommends that:

1. Toronto Water, the Toronto Transit Commission, the Toronto Community Housing Corporation, and other ABCDs as appropriate, work with Facilities and Real Estate to:
 - identify approved capital projects and projects proposed in their 2007 Capital Budgets and 2008-2011 Capital Plans with the potential for energy savings in order to determine their eligibility for funding under the 90 MW program.
 - identify and implement potential Demand Response opportunities in cooperation with Toronto Hydro Energy Services Inc. (THESI).
 - identify potential projects for funding under the OPA's upcoming Clean Energy Standard Offer Program.
2. The Chief Planner and Executive Director, City Planning, and the Chief Corporate Officer ensure that applicants for developments over 1,000 square metres of gross floor area are advised of the opportunity to enrol in the Better Buildings New Construction Program, and the Chief Planner note in any report prepared for Council whether the applicant has enrolled in the Program, and the level of energy efficiency that is contemplated for the development.
3. The Chief Corporate Officer communicate to Natural Resources Canada the City's interest in working with them on the EcoEnergy Efficiency Initiative.

Financial Impact

The final Energy Plan recommendations, when reported to Council later this year, will have impact on both the capital and operating budgets. Potential financial implications will be reported at that time.

Once the City negotiates an agreement for the 90 MW program, the OPA will provide funding for eligible projects until December 31, 2010. The amount of funding will depend on the details of the contract with the OPA, and will be based on the electricity savings generated. Payments from the OPA may take the form of up-front capital funding, payments for availability of load dispatch, and/or payments for demonstrated kilowatts/kilowatt hours saved. The OPA will also provide funds to cover the City's overhead program costs. Further report on this issue will be provided as part of the final Energy Plan.

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

“Status Report on the Energy Plan for Toronto” – Update – P&F June 27/06 report – link <http://www.toronto.ca/legdocs/2006/agendas/committees/pof/pof060620/it041.pdf>

“Request for Funding for an Energy Plan for Toronto; and Status Report on the Energy Plan for Toronto – Second Update” – P&F September 26/06 report – link <http://www.toronto.ca/legdocs/2006/agendas/committees/pof/pof060918/it016.pdf>

These reports have summarized the progress on the Energy Plan to the Roundtable on the Environment, Policy and Finance, and/or City Council.

ISSUE BACKGROUND

Related City initiatives:

The City is currently involved in a number of plans and programs related to energy. These include the Environmental Plan Review, the Renewable Energy Action Plan, the Energy Retrofit Program (ERP), the Climate Change and Air Quality Plan, and the Green Economic Development Plan. Staff of the EEO are participating in all of these initiatives.

Recent Provincial Actions:

In February 2006, the province’s Energy Minister issued a directive to the OPA to achieve 300 MW of peak electricity savings in Toronto by 2010. The City has agreed to achieve up to 90 of those MW of savings. The balance will be achieved by the Building Owners’ and Managers’ Association and Toronto Hydro. The OPA will provide incentive payments to help realize the targeted savings. Further details on the 90 MW plan are outlined below.

The Portlands Energy Centre (PEC) has commenced construction of its gas-fired electrical generation facility, which will eventually have a capacity of 550 MW. The first phase of the PEC is expected to come into full operation in 2008.

The OPA has also released a discussion paper on transmission needs in Ontario which discusses the possibility of constructing a 3rd transmission line into the downtown, to be connected to a transformer at the Hearn site in the Portlands. Currently, all electricity coming into the downtown core is transmitted to either the Manby station in Etobicoke or to the Leaside station. Hydro One has stated that there is limited ability to shift electrical load from one station to another or to other transmission sub-stations in the event of a major supply disruption. Staff from Planning, the Energy Efficiency Office and Public

Health have met with representatives of the OPA, Hydro One and Toronto Hydro to learn more about this proposal, and will report further at a later date.

Bill 21, *The Energy Conservation Leadership Act*, was proclaimed last year. The Act will require all public sector agencies, including municipalities, to prepare an energy plan and file it with the province. Regulations to implement the legislation are currently being developed. Ministry of Energy staff have consulted City staff on this matter.

The province also launched the Renewable Energy Standard Offer Program last year. The program offers a guaranteed price for electricity generated by small renewable power installations, such as solar photovoltaic and wind. It is expected that they will soon announce a similar program for “clean” energy, i.e. high-efficiency natural gas installations, such as the new trigeneration facility in the Direct Energy Centre at Exhibition Place. It would be advisable for staff to identify potential City projects that might be eligible for funding under this new program.

Recent Federal Actions:

The federal Minister of Natural Resources recently announced the creation of the EcoEnergy Initiative, a \$300 million, four-year plan to increase the number of energy-efficient homes and small commercial and industrial buildings across the country through retrofits and higher standards for new construction. This is similar to the mandate of the EEO’s Better Buildings Partnership. The length of the program is almost identical to that of the 90 MW program. It would be appropriate for the City to discuss the possibility of working with Natural Resources Canada on the EcoEnergy Initiative in Toronto, in cooperation with other energy programs, including any that might be offered by Toronto Hydro and Enbridge Gas.

COMMENTS

Energy Plan:

Council has determined that a conservation-first approach is needed to move Toronto from its current unsustainable level of energy consumption to a sustainable level. Renewable energy has also been identified as a means to achieving energy sustainability. The Energy Plan will provide options for short-, mid- and long-term steps to achieve this goal. The Plan is scheduled to be completed by July of this year. Staff are in discussions with Toronto Hydro regarding the provision of electricity demand and consumption data necessary for the development of the plan.

The Energy Plan will deal primarily with energy used in buildings. Energy use in transportation will be the subject of a separate plan.

PricewaterhouseCoopers has been retained to assist with the technical and financial aspects of the Plan. Cassels, Brock and Blackwell LLP will provide legal assistance.

Staff are developing a consultation and communications plan to encourage public participation in the preparation of the Energy Plan. The Plan will contain recommendations on how the City can publicize its leadership on energy issues.

90 MW Program:

Under this program, the OPA will pay incentives to eligible City and community projects that reduce electricity demand. The amount of the incentive is currently being negotiated. The incentive could supplement existing funds in the Energy Retrofit Plan, as well as the incentive payments from Toronto Hydro's Conservation and Demand Management Program, which expires in September 2007. Part of the City's financial savings derived from the 90 MW program could be reinvested in future energy programs and projects, with a portion also being provided to participating ABCDs as an incentive/reward for their participation. Staff should report further on this issue as part of the final Energy Plan.

The City has submitted two program proposals to the OPA. The first involves 20 MW of Demand Response measures, which reduce electricity demand, or generate electricity, during periods of peak demand. Examples of Demand Response include measures that can automatically change the temperature setting on air conditioners, control lighting, and bringing backup generators on line to generate power. The planning and implementation of this program will be carried out by Toronto Hydro Energy Services Inc. in consultation with ABCDs, the Energy & Waste Management Office (EWMO) in the Facilities and Real Estate Division and the EEO.

The greatest potential for Demand Response and other energy savings is in those ABCDs with high levels of energy consumption - in particular, Toronto Water, the Toronto Transit Commission and Toronto Community Housing Corporation. Together, these 3 bodies account for approximately 80% of the City's electricity consumption.

The capacity to automatically limit energy use in City facilities could also allow for the automation of elements of the City's Smog Alert Response on Smog Alert days, since part of the Response involves reducing energy use in the City's buildings. Consultations with the Medical Officer of Health, ABCDs and THESI will help identify the opportunities that this presents. Pilot projects to demonstrate the technology are being implemented by THESI and the EWMO.

The second proposal is to expand two existing EEO programs - the Better Buildings Partnership (BBP) and the Better Buildings New Construction Program (BBNCP). These programs help developers and building owners reduce energy consumption by providing assistance with retrofits to existing buildings, and more efficient construction of new buildings. The energy savings target for this proposal is 70 MW.

Although the City has worked aggressively to reduce its own energy consumption, there are still opportunities in its own facilities to contribute to the 90 MW reduction target. In

order to identify which facilities may be eligible for the OPA incentive payment, ABCDs will need to identify capital programs with potential energy savings to the EEO.

Two projects that could be implemented in short order with significant electricity demand reductions are the conversion of the existing cooling systems in City Hall and Police Headquarters to Deep Lake Water Cooling (DLWC). DLWC at these two facilities will reduce electricity demand by approximately 1,500 kW. Enwave has indicated that cooling capacity of the DLWC system is being sold at a steady rate. The DLWC capacity is 75,000 tons and 59,000 tons has already been sold. If the City does not act soon DLWC capacity may not be available for Police Headquarters or City Hall.

The incentive payment will be able to be used to encourage private developers to include energy efficiency measures in their projects, which in turn will assist in implementing the City's new Green Development Standard. Staff need to ensure that projects are identified early in the development process in order to maximize their potential energy savings.

OPA staff have indicated that they would like the City's program to focus on the Municipal, University, School and Hospital (MUSH) sector, among others. The EEO has told the OPA that Council has also directed it to establish programs for the residential, small commercial and industrial sectors. Discussions with the OPA as to which sectors the City's 90 MW program will address are ongoing.

Council also directed staff to discuss the creation of a Toronto Conservation Reserve Fund for ongoing conservation and demand management initiatives with the OPA. Staff will submit a separate proposal to the OPA for the Fund, and will report further to Council as part of the final Energy Plan report.

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SIGNATURE

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