

## **Update - Energy Reporting Requirement for Large Buildings**

<b>Date:</b>	July 31, 2014
<b>To:</b>	Parks and Environment Committee
<b>From:</b>	Chief Corporate Officer
<b>Wards:</b>	All
<b>Reference Number:</b>	P:\2014\Internal Services\E&E\Pe14007e&e (AFS19368)

### **SUMMARY**

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This report provides an interim update regarding the development of a mandatory energy and water use benchmarking and reporting requirement for large buildings. Research activities are underway by City staff, in co-operation with a cross-corporate working group, and with support from an external consultant, to evaluate the feasibility of such an initiative and analysis of key policy issues.

Based on the research findings, and subsequent stakeholder engagement process, a proposed by-law and implementation plan will be presented to City Council for consideration in 2015.

### **RECOMMENDATIONS**

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#### **The Chief Corporate Officer recommends:**

1. The Parks and Environment Committee receive this report for information.

#### **Financial Impact**

The Ontario Power Authority has awarded the City of Toronto's Environment & Energy division \$70,000 in funding to support research and stakeholder consultation activities in connection with the development of a proposed energy reporting and benchmarking by-law.

The 2014 operating budget for the Environment & Energy division has been adjusted to account for this new revenue.

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

## **DECISION HISTORY**

At its meeting on March 3, 2014, the Parks and Environment Committee adopted item PE26.3 *Energy Reporting Requirement for Large Commercial and Multi-Residential Buildings*, which directs the Chief Corporate Officer to provide an interim status report regarding the development of a mandatory energy and water use reporting and benchmarking requirement for large buildings.

Link to item PE26.3:

[https://epass.toronto.ca/f5-w-687474703a2f2f6170702e746f726f6e746f2e6361\\$\\$/tmmis/viewAgendaItemHistory.do?item=2014.PE26.3](https://epass.toronto.ca/f5-w-687474703a2f2f6170702e746f726f6e746f2e6361$$/tmmis/viewAgendaItemHistory.do?item=2014.PE26.3)

## **ISSUE BACKGROUND**

As part of the *Climate Change Action Plan* (2007) and *Power to Live Green: Toronto's Sustainable Energy Strategy* (2009), City Council adopted energy conservation and greenhouse gas (GHG) emission reduction targets in an effort to reduce the City's reliance on fossil fuels, curb harmful emissions that contribute to climate change, and generate certain economic benefits.

About half of the City's overall GHG emissions are generated from building operations (e.g. space heating and lighting). Eighty percent of the buildings projected to be in use in 2050 have already been constructed, so it is critical to address energy conservation and demand within existing buildings. Doing so will foster more efficient resource use, unlock energy consumption savings, and enhance the future sustainability of Toronto.

While revisions to the Ontario Building Code and enhancements to Toronto's Green Standard have comprehensively addressed energy efficiency in new buildings, no comparable regulatory improvements have occurred for existing buildings.

For existing buildings in particular, mandatory energy benchmarking and reporting has emerged as a key regulatory alternative for cities to accelerate improvements in energy performance, and drive reductions in GHG emissions. The benchmarking experiences in U.S. cities, such as New York City, Chicago and Washington D.C., suggest that continued involvement by building owners/managers in tracking and comparing building energy and water use, combined with public disclosure, have triggered improvements in building energy performance over time

## **COMMENTS**

A study undertaken by the U.S Environmental Protection Agency found that buildings that continuously benchmarked as part of Energy Star Portfolio Manager Program achieved a 7% improvement in energy consumption savings over a three year period (2008-2011). Similarly, CivicAction's *Race to Reduce*, a voluntary challenge for the commercial office sector, noticed a cumulative 9% reduction in energy consumption after three years of reporting by more than 175 participating building owners and tenants across the Greater Toronto-Hamilton area.

The benchmarking of energy usage, coupled with public disclosure of results, is at the heart of these programs and campaigns, and underscores the linkages between benchmarking and disclosure and its ability to drive energy savings.

This staff report provides an update on the development of an energy reporting requirement for large buildings in Toronto. Research is well underway by City staff, with the support of a cross-corporate working group, and external consultant Halsall Associates, to evaluate the feasibility of such an initiative and to address policy issues.

After a policy framework is developed, extensive consultation will commence in the Fall/Winter 2014-2015 to solicit feedback from industry stakeholders. A proposed by-law for consideration by City Council is expected in the second quarter of 2015.

## **What is an Energy Reporting Requirement?**

An Energy Reporting Requirement (ERR) refers to a mandate, often in the form of a municipal by-law or ordinance, for owners of large buildings to annually submit energy and water usage data about their properties to the municipal government. In turn, municipal staff compiles this information into a database, sometimes making it available for public disclosure, and publishes an annual report on city-wide results and trends.

An ERR enables municipal staff (and building owners alike) to compare, or benchmark, a building's relative performance over time or against similar buildings. Where the database, along with the annual report, is publicly disclosed, the process enhances transparency, which is the first step towards informing and motivating owners and managers to improve their buildings' energy efficiency. Similarly, ERR better informs investor and buyer decision-making about the valuation of a property by providing information to real estate markets.

Most commonly, an ERR applies to multi-story commercial, residential and public buildings of a certain type and size threshold. It does not cover single-family dwellings. In Ontario, buildings owned and operated by the broader public sector, like municipalities, hospitals and schools, do not need to be subject to an ERR because an existing Ontario energy reporting regulation under the Green Energy Act - O.Reg 397/11 - already imposes this requirement.

## **What are the benefits of an Energy Reporting Requirement to Toronto?**

An ERR is well-aligned to support elements of City Council's approved Strategic Action, namely Strategic Action #6 *Support Environmental Sustainability*, by:

***Improving Energy Security:*** Reduced demand for energy places less strain on Toronto's aging distribution infrastructure and therefore helps to mitigate the risk of power disruptions, while also better managing the needs of a growing city.

***Achieving GHG Targets:*** Given that approximately half of Toronto's GHG emissions are generated from buildings, the anticipated investment in buildings retrofits will drive gains in energy conservation, and in turn support the city's GHG emissions reduction goals (i.e. 30% reduction by 2020).

***Enhanced Programs & Policies:*** Developing a more accurate database of building energy consumption information provides the city, utilities and industry stakeholders with a resource to identify areas for improvement and better informs decision-making. A recent City Council resolution underscored this need<sup>1</sup>. This would allow for customization of programs and targeted policies to those buildings most in need of support.

Further research into the economic (e.g. job creation, operating cost savings) and social impacts of an ERR are forthcoming. As a next step, a modelled analysis of the city's existing building stock will look at the relative impacts of various policy scenarios that the City might consider implementing. These results will inform a future staff report and accompany the proposed by-law slated for 2015.

## **Does the City of Toronto have sufficient authority to enact a by-law to impose an Energy Reporting Requirement?**

The two main components of a by-law mandating an ERR would include:

1. Requiring owners of certain buildings to provide resource utilization data and information about the building's profile to the City in a prescribed format. The parameters for reporting might include: address, year built, gross floor area, natural gas, electricity and water consumption, GHG emissions and an efficiency benchmark rating or score.

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<sup>1</sup> Per recommendation #1, PE28.4 *Toronto's 2012 Greenhouse Gas and Air Quality Pollutant Emissions Inventory*

2. Disclosing of building data and benchmarking results for covered buildings on an annual basis. The extent of disclosure can vary depending on the by-law scope and design. It might be limited only to building owners subject to the reporting requirement or more broadly to the general public. Another approach is disclosing energy reports on a transactional basis, for example, to a prospective buyer at time of sale. Any personal, financial or proprietary information related to a building, its owners or tenants would be excluded from reporting and disclosure.

The City of Toronto Act provides City Council with broad authority to pass by-laws respecting the economic, social and environmental well-being of the City and the health, safety and well-being of persons, provided that there is a proper municipal purpose for the by-law, that the by-law is not adopted in bad faith, and that the by-law does not frustrate the purpose of an existing federal or provincial Act, regulation or instrument.

City staff is working with City Legal Services, Halsall Associates, and utilities to confirm whether and how these legal requirements are satisfied in light of two main components articulated above. To date, no major barriers to satisfying these requirements - including privacy law violations - have been identified.

### **What is an appropriate data platform and benchmarking tool?**

An assessment of data platforms and benchmarking tools is underway. Criteria being used to evaluate an appropriate ERR data platform and benchmarking tool includes: ease of use, cost and time required to input data, as well as relevant information outputs for stakeholders.

An example is Energy Star Portfolio Manager which is a prominent benchmarking tool for commercial buildings used in North America. Originally developed by the U.S. Environmental Protection Agency, Natural Resources Canada has now licensed it for Canadian use. Portfolio Manager has been used by over 260,000 buildings in the U.S, accounting for about 40% of commercial floor space, and over 7,200 buildings in Canada. The platform is also used by property owners and managers for such voluntary programs as LEED Existing Buildings, Energy Star Label and Civic Action's Race to Reduce.

Features that potentially make Portfolio Manager a good fit for Toronto's ERR include:

- Free, on-line tool for property owners/managers;
- Ability to enter aggregated utility data for sub-metered buildings, including automatic data uploading for utility providers;

- Energy use intensity and emissions factors are automatically calculated with ability to compare results across a database of various building types; and
- Ability to generate an energy performance rating, or score, from "1" to "100" for select building types, as well as other metrics such as greenhouse gas emissions, and building performance metrics can be shared with third-parties

City staff is engaged with Natural Resources Canada and continue to evaluate the effectiveness of the Portfolio Manager tool and its functionality to potentially serve as the technical backbone for an ERR.

### **How will property owners be able to access whole building data to comply with the by-law?**

Experience from U.S. cities highlights the importance of giving property owners easy access to their building energy consumption data as the cornerstone of a successful ERR. Building owners often face technical or logistical challenges in accessing all the meters within a building and in some cases, such as apartment buildings, they might not be privy to data at all. Effective data acquisition is a critical first step to benchmarking a building's performance and can pose challenges to an owner's compliance obligation if it is not easily attainable.

Consequently, the City has engaged with Enbridge Gas, Toronto Hydro and Toronto Water to explore approaches the utilities can take to provide aggregated and/or whole-building data to building owners without infringing on privacy laws of building tenants. Such approaches allow sub-metered data or tenants consumption patterns to remain anonymous because data is rolled-up to the building level. Therefore, the origin of the data is masked and cannot be traced to a single suite, tenant or meter.

Staff is also exploring how whole-building data can be automatically uploaded into a benchmarking tool to streamline the time and effort a property owner would otherwise have to otherwise commit to manually inputting the data. Such functionality would also improve data quality by reducing the risk of human error, strengthen the overall building database and likely result in a greater by-law compliance

### **What are the costs to design and implement an Energy Reporting Requirement?**

Led by the Environment and Energy division, with support from the cross-corporate working group, existing staff resources have already been deployed to designing the ERR and related program. The Ontario Power Authority has expressed a keen interest in this project and has provided \$70,000 in funding to the City to support this phase of work.

Should City Council enact an ERR by-law, additional funds will need to be budgeted for program roll-out and ongoing administration. Such activities include:

- information/training sessions for building owners,
- IT development and maintenance,
- staffing support for data collection, benchmarking technical support, and guidance on how to submit reports to the city.

Additionally, after building data has been submitted to the City by building owners, efforts are then required to compile, analyze and report on City-wide results and trends.

U.S. cities who have implemented ERR ordinances suggest that staffing levels could range from one to five full-time employees per year. Cost and resource requirements are likely to decline after the first few years of implementation based. Also, the City would leverage industry, academic and utility partners for implementation support to minimize the direct program costs to the City, as cited above.

Since cost will ultimately depend on the scope of the ERR and number of buildings covered, a future staff report will detail resource requirements for program rollout and administration and accompany the proposed by-law.

## **How have stakeholders been consulted and engaged?**

In preparation of this report, the Environment and Energy division has engaged various experts and developed a consultation plan to ensure all stakeholders have the opportunity to inform the development of an ERR.

**Stakeholder engagement:** A cross-corporate working group has been established to support the development of a proposed ERR and program, including representatives from the following organizations:

Toronto Water	City Planning
Tower Renewal Office	Toronto Buildings
Legal Services	Toronto Atmospheric Fund
Enbridge Gas	Toronto Hydro
Toronto Water	

Staff has had preliminary discussions and given presentations to industry associations, including REALpac, CaGBC, BOMA, to introduce the concept of an ERR. These associations have been receptive to working with the city to reach out to their respective memberships as part of the by-law design process.

**External consultation:** To ensure all affected parties have an opportunity to provide input during the by-law's development, an extensive consultation plan is under development, in cooperation with a professional firm to be hired by the City in September/October 2014. The types of stakeholders to be engaged include:

Building owners & managers	Toronto Hydro
Building science experts	Enbridge Gas
Energy management professionals	Ontario Power Authority
Tenants' associations	Natural Resource Canada
Real estate professionals	Ontario Ministry of Energy

U.S. cities who have implemented ERRs have allocated on average a period of six months to one year for stakeholder consultation. The City will require a similar time period, meaning the final staff report outlining a proposed by-law and implementation plan will be presented to City Council in the second quarter of 2015

Staff will work with the consultant to develop a comprehensive engagement plan that balances the need for extensive industry consultation while positioning a staff report for consideration by City Council in 2015.

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## SIGNATURE

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