



REPORT

COMMUNITY SERVICES COMMITTEE

MEETING DATE: DECEMBER 11, 2012

FROM: Environmental Policy Department

DATE: November 23, 2012

SUBJECT: **Partners for Climate Protection Program (PCP) and Corporate Energy Management Update**

LOCATION: Town Wide

WARD: Town Wide

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RECOMMENDATION:

1. That the report on Partners for Climate Protection Program (PCP) and Corporate Energy Management Update, dated November 23, 2012 from the Environmental Policy Department, be received;
2. That the integration of the Energy Conservation and Demand Management Green Energy Act regulation requirements with the town's Partners for Climate Protection program and the 2009/2010 Corporate Energy Management Plan be endorsed; and
3. That the revised PCP greenhouse gas (GHG) emission reduction target of 50% below 2014 per capita (tonnes CO₂e/person) emissions by 2057 for both the corporation and the community, and the proposed review process for GHG emission reduction target setting, be approved.

KEY FACTS:

The following are key points for consideration with respect to this report:

- The town has developed and implemented energy conservation and greenhouse gas (GHG) emission reduction planning since 2008.
- The town will need to complete the *Green Energy Act* reporting requirements under the Ontario Energy Conservation and Demand Management *Regulation 387/11* by July 2013 and in 2014.
- Staff reviewed all of the existing work completed for the Partners for Climate Protection program and Corporate Energy Management Plan and propose to integrate these programs with the new Energy Conservation and Demand

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Management Regulation reporting requirements as a more efficient, streamlined process in future.

- Staff recommends new Partners for Climate Protection (PCP) corporate and community GHG reduction targets that better reflect the challenges of Oakville as a growing community.
- This report provides an update on some of the key corporate energy management and green fleet initiatives that have been implemented over the last two years.

BACKGROUND:

Energy management planning is a component of the Vision 2057 Preserve It! quadrant to support the town in achieving energy efficiency, conservation, diversification, cost avoidance and greenhouse gas emission (GHGe) reductions for the corporation and the community.

To address energy management and conservation, as well as greenhouse gas emission reporting, the town has focused on the development and implementation of two programs; the Partners for Climate Protection program and the Corporate Energy Management Plan. A background synopsis of each is provided below.

Partners for Climate Protection

Since 2008, the town has been working towards achieving each of the five milestones in the Partners for Climate (PCP) program. To date Oakville has received recognition for the completion of Milestones One, Two and Three.

The town's current Milestone Two GHG reduction targets are ***"a corporate operations GHG emissions target of 20% below 2004 levels by 2014 and a community GHG emissions target of 6% below 2004 levels by 2014."***

Council's approval of the June 28, 2011 Community Services Committee (CSC) recommendations included:

"That staff continue to monitor the Western Climate Initiative and the progress toward development of an Ontario cap-and-trade system and report to Council annually on issues of energy management and GHG emissions."

In addition, at this CSC meeting, there was discussion regarding potential opportunities to revise the current PCP GHGe reduction targets to recognize GHGe improvements through an intensity (population and unit) based approach. This staff report addresses the above-noted resolution as well as the 2011 Committee discussions.

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All of the past staff reports and inventory data related to the PCP Program are available online at: <http://www.oakville.ca/environment/partners-climate-protection.html>.

Corporate Energy Management Plan

Council approved the town's first Corporate Energy Management Plan in 2009. This included an extensive review of the town's energy usage, energy accounts and existing energy conservation initiatives. Additionally, the plan includes actions that support energy and cost reductions as well as energy usage and cost avoidance.

Both the PCP and Corporate Energy Management planning were initiated by the town as a method of addressing the need for strategic and systematic greenhouse gas emission reduction activities and energy reduction and cost saving initiatives.

Through provincial legislation, the town will soon be required to measure, plan and report on the implementation of energy conservation goals and actions. This has been determined through the passing of the Ontario *Green Energy Act, 2009*.

Green Energy Act (GEA)

In 2011, the Government of Ontario released the Energy Conservation and Demand Management Plan Regulation (*Ontario Regulation 397/11*) developed under the *Green Energy Act, 2009*, to require municipalities to report on energy consumption and conservation actions. This is provided as Appendix A to this staff report.

The first reporting deadline comes into effect July 2013 and will require municipalities to submit a corporate summary of annual energy consumption and greenhouse gas emission data to the Minister of Energy. After 2013, providing a summary report to the Minister will be an annual requirement. Staff will provide a report to Council with the annual progress on GEA reporting to meet regulatory requirements.

A second component to the Energy Conservation and Demand Management (ECDM) regulation is the completion of a municipal energy conservation and demand management plan by July 2014. The plan must contain goals, actions and cost and energy saving measures related to annual corporate energy usage. This plan must be published online and updated on or before every fifth anniversary thereafter.

The following report provides an update on the PCP program, corporate energy management initiatives and the next steps required for compliance with the *Green Energy Act* reporting requirements.

COMMENT/OPTIONS:**Integration of the PCP program, Corporate Energy Management and the GEA**

The three programs; Partners for Climate Protection (PCP), the Corporate Energy Management Plan and the ECDM Ontario Regulation described in the Background component of this report have similar goals to achieve energy reporting and energy and GHG emission reduction actions. Due to this overlap, staff has identified the opportunity to improve integration of the three programs to ensure consistency and transparency, avoid redundancy, streamline reporting and improve the monitoring and measurement of energy conservation and greenhouse gas emission programs.

The enhanced integration of these three programs will provide for improved efficiency of all of the town's energy reduction and cost saving efforts.

Revitalizing the Partners for Climate Protection Program***1. Review of Existing Work***

Since 2008, staff has been working to create rationalized, meaningful and quantitative plans that inventory corporate and community energy usage, as well as develop goals and actions to reduce GHG emissions and energy use. Staff reviewed the existing plans developed to date and that are currently in implementation, including:

- The Partners for Climate Protection Milestone One GHG emission inventory for the corporation and Oakville community;
- The Milestone Two GHG reduction targets for the corporation and the community;
- The Milestone Three Corporate Local Action Plan and Community Energy Plan; and
- The 2009/2010 Corporate Energy Management Plan.

Both the Milestone Three plans and the Corporate Energy Management Plan recommend a regular review of existing baseline data and improved data sources for effective implementation of energy and GHG emission reduction measures. Therefore a review and update of corporate and community data was completed in order to incorporate improved data from new sources, new buildings, fleet and the commercial and industrial sector.

2. Energy and GHG Emission Update for Corporate and Community Inventory

Appendix B and C provide summaries of the corporate and community energy and GHG emission data update analysis.

The update to the corporate GHG inventory was completed for the years 2010 and 2011 (Appendix B). Additionally, an update to the community GHG inventory was completed for 2010 and 2011 (Appendix C). The updating of the corporate and community energy baseline involved inputting data from approximately 400 electricity accounts, 70 natural gas accounts, 85 corporate facilities, 500 fleet vehicles, and 5 new community centres. Issues were experienced with data inputs from external and internal services related to data integrity, file upload incompatibilities, and missing data, such that it is recognized that there is an essential need to work with external and internal partners to improve data inputs. However, even with the data issues, the outcomes of the analysis are considered to be valid and rationalized through the use of appropriate analytical methodologies.

In addition to the update of the energy and GHG emission (GHGe) data for the corporate and community inventory, staff looked at a series of indicators to review the per capita change in GHG emissions and energy use for both the corporation and community. This indicator review is also provided in Appendix B and C.

3. Analysis of the Energy and GHG Emission Data

In both the corporate and the community GHG emission inventory, GHG emissions increased. There are multiple reasons as to why this increase has occurred and this will be expanded on below.

Corporate Energy and GHG Emission Data (Appendix B)

The corporate GHG emissions inventory for 2011 increased by approximately 19% from 2004 levels. This increase in absolute GHG emissions can be related to the significant growth in town facilities and services from 2004 to 2011.

A review of the data using an intensity analysis shows that there has been a decrease in building GHG emissions per corporate building square footage from 2004 by 16%. As well, when the 2011 total corporate data was compared to the Oakville population there was no change in per capita GHG emissions from 2004. This acknowledges the avoided energy usage and greenhouse gas emissions that are associated with the increase in corporate facilities and services and **represents positive progress** in energy and GHGe management.

The intensity analysis provides a better indication of the achieved efficiencies within the corporation to acknowledge the energy conservation measures and initiatives that have been put in place.

Through this process, staff identified the need to improve the data the town receives from external sources and implement a new corporate energy management system.

High quality and consistent data (data integrity) is necessary for valid and meaningful energy and GHGe management, satisfying the GEA requirements and assessing the progress towards energy and GHGe reduction targets.

The town will work with its external partners to continuously improve the data received in order to enhance assessment of the impact of energy conservation and GHG reduction actions.

Community Energy and GHG Emission Data (Appendix C)

The community GHG emission inventory for 2011 has increased by approximately 21% from the 2004 baseline. The 2010 and 2011 update includes data from sources that were not available in 2004 and a more accurate methodology was used to capture the impact of transportation emissions. This can explain some of the increase seen in the GHGe inventory. In addition, the town's population has increased by 17% and the number of households has increased by 33% since 2004.

As a growing community, Oakville faces significant challenges when it comes to reducing energy consumption and GHG emissions. In order to recognize if the community is becoming more efficient, a per capita analysis is required to further understand the impacts of energy conservation programs and actions.

An analysis of Oakville's residential sector using population data displays a decrease in 2011 electricity and natural gas usage from 2004 levels by 0.8% and 5%, respectively.

To complete an analysis of the commercial, industrial and transportation sectors further indicator data is required. Additionally, work with industry representatives and external providers of data is needed to improve the quality and consistency of the data received.

Moving Forward with Energy and GHG Emission Reduction Planning

Three steps are required for staff and the town to continue moving forward with energy management planning, conservation and greenhouse gas emission reduction for the corporation and community. The three key steps are:

1. Alignment of the Corporate Energy Management Plan, PCP Local Action Plans and Green Energy Act Requirements

Staff will work to integrate and align these three programs. The aim is to develop one corporate document and continue the Community Energy Plan as a separate plan.

2. Corporate and Community Data Improvements

Staff is currently implementing a new corporate energy management system that better supports facility energy tracking and management. There is an essential need to work with external partners to improve quality (integrity) of data received for both community and corporate energy use. Also required to achieve improvements will be a review with external partners of their data collection methodology for community energy reporting. This will help staff develop improved indicators and intensity targets going forward.

3. New Corporate and Community Targets

A review and change in the corporate and community PCP targets is required to reflect that Oakville is a growing community. Reporting on changes in absolute targets obscures progress on a per unit basis by the corporation and community in building greener buildings, achieving more efficient fleet operations and taking energy conservation actions.

Currently, the town is meeting its corporate GHG emission reduction target through the purchase of green energy offsets. The 2013 budget allocates \$50,000 for these purchases. In order to continue this progress since 2010 to meet Council's 2014 corporate GHGe target, and subject to future budget approvals, this amount is planned to grow by another \$13,000 in 2014. Through this approach Council will successfully meet its corporate reduction target of 20% from 2004 to 2014 complementing above noted improvements in green building and fleet operations. The need for future offset purchases will be determined by the updated PCP targets and action planning and then referred to future budgetary processes.

Oakville faces the challenges of the impacts of growth in the community and increased numbers of corporate facilities and services. These influences have a direct impact on the increase of GHG emissions and energy use for the corporation and the community.

An intensity target is needed that will capture and recognize GHGe and energy reductions to better communicate how we are becoming more efficient with our energy use and identify the sectors that have the greatest impact on GHGe reductions.

It is recommended that new intensity-based targets be established for both the corporation and community. This action will better support continued implementation of meaningful and strategic measures, e.g. green building, fleet greening and energy conservation that contribute to long-term GHGe and energy reductions.

The proposed intensity-based (normalized) reduction target has been developed to reflect Oakville's growth challenges and aligns with the town's Vision 2057 initiative.

It is recommended that Council approve a GHG emission reduction target of:

**50% below 2014 levels per capita (tonnes CO₂e/person)
emissions by 2057 for both the corporation and the community.**

It is recognized that this new target is ambitious however, in a scan of other municipalities, such as the City of Pickering and the Region of Waterloo, who have moved to include intensity targets staff feel there will be a trend towards this approach.

In addition, a 5-year review in conjunction with the GEA reporting will be conducted to look at the absolute GHG reduction for both the corporation and the community. The town will continue to review the implementation of the intensity (population) based targets as well as the development of absolute targets within this review framework going forward in order to assess the applicability of these two target setting approaches.

The development of absolute targets can be reconsidered once the town has implemented the new energy management system, worked with external partners to improve data integrity and increase data quantity, and has developed more accurate indicator analysis methodologies to suit improved data integrity that currently is less than desirable.

Corporate Energy Conservation and Management Actions Update

The following component of the report contains an update on corporate energy management and the conservation initiatives that have taken place over the last two years. Many of these actions, projects, and programs will support the town's energy management program and successful completion of the GEA energy conservation and demand management regulation requirements.

The following actions have been implemented as recommended in the Corporate Energy Management Plan. A complete description of each of the actions mentioned below is provided in Appendix D.

Energy Management Action	Description of Action
New Energy Management System	Staff purchased a new energy management system in 2012. This system is more dynamic, provides increased reporting capabilities and supports

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Energy Management Action	Description of Action
	significant improvements to monitoring real-time data. The new system will ensure successful reporting for the GEA requirements.
Building Retrofits and Building Automation System (BAS) upgrades	Building improvements and retrofits have been implemented on many existing facilities. Building Automation Systems have been installed in most of our large buildings. The town received an incentive cheque of \$37,000 from Oakville Hydro for energy efficiency improvements.
Sustainable Building Design Procedure and Sustainable Design Guidelines (SDG)	The SDG are required when the town undergoes a retrofit or improvements are made to existing buildings. The goal of the SDG is to ensure energy efficiency and green design features are integrated into town facilities consistently and effectively.
AMO Local Authority Services Electricity Procurement Program	Oakville participates in the AMO LAS aggregated electricity purchasing program. From July 2011 to June 2012 Oakville saved \$343,000 in energy costs through participation in this program.
Streetlight and Municipal Outdoor Lighting Standard	Staff developed a Municipal Outdoor Lighting Standard and Streetlight Standard. The standard considers energy efficiency, dark sky impacts, effective asset management, and safety. A significant step will be achieved with integrating the standards into the new Mattamy development in the New Communities of Oakville as the initial implementation by a developer. Also, the town has successfully used the standard for the Sixth Line municipal street lighting upgrades.
Rooftop Solar Photovoltaic Installations	Installation of a 60 kW solar photovoltaic system on Town Hall occurred in July 2012. This was achieved through a partnership with Oakville Hydro. The Town Hall installation is a part of the Ontario Power Authority Feed-In-Tariff program. In 2013, other town facilities will install rooftop solar photovoltaic systems.
Leadership in Energy and Environmental Design (LEED) buildings	Implementation of the LEED silver requirement for new town owned facilities. The new Transit facility and Queen Elizabeth Park Community and Cultural Centre have been designed to LEED Silver. Sixteen Mile Creek Sports Complex was awarded LEED Gold certification. The new North Park depot is currently being designed for LEED Silver certification.

Energy Management Action	Description of Action
Electric Vehicle Purchase	In November 2012, the town's Fire department purchased the first electric vehicle in the corporate fleet. Staff has been involved with the assessment of electric vehicles for municipal fleet operations since 2009 including membership in the GTA EV300 program. This has provided the leadership necessary to implement the steps identified in the Green Fleet Procedure action plan.
Corporate Fleet Electric Charging Station	The implementation of a charging station for town vehicles is underway to support the first and newly purchased Ford Focus EV for the Fire Department's Fire Prevention services.
Community Electric Charging Station Network	Throughout 2012, town staff in partnership with Oakville Hydro and other external stakeholders has been reviewing the opportunity for an electric vehicle charging station network in Oakville.

Ontario Cap-and-Trade and Western Climate Initiative (WCI) Update

The WCI is a collaboration of independent jurisdictions working together to identify, evaluate, and implement policies to tackle climate change at a regional level. The partnership includes California, British Columbia, Manitoba, Ontario, Quebec, Washington, Oregon, Arizona, Montana, Utah and New Mexico. The WCI Partner jurisdictions have developed a comprehensive strategy to reduce GHG emissions by 15% below 2005 levels by 2020. When fully implemented in 2015, it will cover nearly 90% of greenhouse gas emissions in WCI partner states and provinces including GHGs from electricity, industry, transportation, and residential and commercial fuel use.

The *Design for the WCI Regional Program*, was released on July 27, 2010. This document provides content on the implementation framework of a cap-and-trade program for the WCI Partner jurisdictions. Quebec, California and British Columbia were expected to implement the program in 2012. The Province of Ontario has stated that they will join later but have not set a specific date for implementation.

Staff has been requested to periodically update Council on the development of an Ontario cap-and-trade program and the status of the WCI. Currently, there is no change in Ontario's implementation status of the WCI program from the last staff report in 2011 and staff will continue to monitor Ontario's progress in the development of a cap-and-trade system.

Next Steps

To continue with the implementation of the Partners for Climate Protection (PCP) program, corporate energy management, and the GEA Energy Conservation and Demand Management regulation requirements, the immediate next steps for staff will be:

1. Complete the integration of the three programs; Partners for Climate Protection program, corporate energy management and the GEA Energy Conservation and Demand Management regulation requirements into one program to achieve efficiencies, avoid redundancies, and streamline reporting;
2. Work with external partners to deliver consistent and quality data improvements; and
3. Complete the implementation of a new corporate energy management system with the improved software platform.

Conclusions

This GHGe and energy consumption update and analysis leads staff to recommend that the Energy Conservation and Demand Management Green Energy Act regulation requirements, the town's PCP corporate GHGe reduction program and the 2009/2010 Corporate Energy Management Plan be integrated into one plan, and that revised PCP corporate and community greenhouse gas (GHG) emission reduction targets and review process for GHG emission reduction target setting be established.

Future updates to Council on the status of the *Green Energy Act* reporting requirements, the PCP program and corporate energy management will be provided annually.

CONSIDERATIONS:**(A) PUBLIC**

The community has a role to fulfill in the implementation of the PCP program to improve energy efficiency, reduce GHG emissions, and commit to energy conservation practices.

(B) FINANCIAL

As necessary, staff resources and other associated operating cost implications to continue implementation of the PCP program, corporate energy management, and GEA reporting requirements will be brought

forward for consideration at the appropriate time during the town's annual budget review process.

(C) IMPACT ON OTHER DEPARTMENTS & USERS

The impact of the PCP program, corporate energy management, and GEA reporting affects all departments within the town, related boards and authorities, other agencies and Halton Region.

(D) CORPORATE AND/OR DEPARTMENT STRATEGIC GOALS

This report addresses the corporate strategic goal to:

- enhance our natural environment
- have environmentally sustainable programs/services
- continuously improve our programs and services
- be fiscally sustainable
- be innovative
- be the most livable town in Canada

(E) COMMUNITY SUSTAINABILITY

The Partners for Climate Protection program and Corporate Energy Management Plan impacts the environmental pillar of sustainability by continuing to reduce corporate and community GHG emissions and improve the towns' ecological footprint. As well, the PCP program and Corporate Energy Management Plan identifies actions and best practices to reduce the town's energy costs and improve air quality.

APPENDICES:

Appendix A – Energy Conservation and Demand Management Regulation
(*Ontario Regulation 387/11*)

Appendix B – Corporate Energy and PCP Update

Appendix C – Community Energy and PCP Update

Appendix D – Corporate Energy Management Plan Action Update

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