



Corporate Strategic Initiatives Department

TO: Budget and Corporate Services Committee

SUBJECT: Burlington Community Energy Plan – Terms of Reference

Report Number: CSI-02-12

File Number(s): 210-01

Report Date: March 5, 2012

Ward(s) Affected: 1 2 3 4 5 6 All

Date to Committee: March 27, 2012

Date to Council: April 10, 2012

Recommendation: Endorse the preparation of a community energy plan as outlined in CSI-02-12.

Purpose:

- Address goal or action in strategic plan
 - Establish new or revised policy or service standard
 - Respond to legislation
 - Respond to staff direction
 - Address other area of responsibility
-

Reference to Strategic Plan:

- Vibrant Neighbourhoods
- Prosperity
- Excellence in Government
- N/A

This initiative will fulfil the following action: *Use partnerships to develop and implement a community energy plan.*

Background:

In 2002, the city joined Partners for Climate Protection (PCP), a program to assist municipalities to reduce greenhouse gas (GHG) emissions (*Report D&I-03-02*). In 2007, staff presented the Agenda for Action plan (*Report COMSERV-04-07*) to help reduce corporate greenhouse gas emissions. Council referred the plan to the strategic planning process and the six recommended actions were subsequently incorporated into *Future Focus Seven*.

As of 2011, the six actions have been implemented:

- Energy management is the responsibility of Corporate Strategic Initiatives;
 - A system has been acquired through AMO to track, monitor and report on corporate energy demand and consumption;
 - A sustainable building policy has been adopted for corporate
-

facilities, with LEED (Leadership in Energy and Environmental Design) silver as a target;

- A green purchasing policy was recently approved by Council;
- A Transition Strategy to Green the Corporate Fleet was approved in 2008; and,
- All city owned traffic signals have been converted to LED fixtures.

Further information on the status of the Agenda for Action is provided in Appendix 'A' and information regarding the Partners for Climate Protection program is found in Appendix 'B'.

Additional conservation measures include:

- a corporate energy policy;
- an idling control by-law and awareness program;
- a zero waste strategy; and,
- a centralized building automation system.

A program is also underway to complete energy audits of major city facilities and develop a corporate energy management plan, which will build on conservation and renewable energy measures already implemented, such as:

- energy efficient lighting upgrades;
- LED emergency exit signs;
- motion sensors in meeting rooms, offices and washrooms;
- more efficient HVAC and other mechanical equipment;
- the installation of solar thermal panels to heat pool water on a seasonal basis at Tansley Woods Community Centre;
- the installation of photovoltaic panels at Fire Station #8 to generate electricity; and,
- the use of a solar wall at Fire Station #8 to improve heating and ventilation.

In addition, city staff have been actively involved in promoting conservation through information on our website, the Take Action Burlington quarterly environmental report, and community displays and events, such as the Community Climate Change Summit in 2010. The city's planning department is working on sustainability guidelines for privately developed buildings in the community. Local community groups have been busy raising awareness about climate change and support the use of renewable energy.

Many of the following conservation programs have been promoted to residents, businesses and/or staff through either the city, the region, Burlington Hydro and/or Union Gas:

- Earth Hour
- Ontario Power Authority's (OPA) Power Pledge
- OPA's Black Out Challenge
- OPA's microFIT program for renewable energy
- Energy efficient light and energy saving kit giveaways
- Commuter and clean air challenges
- Bike to work and carpool days
- Smart Commute program
- Reminder stickers to turn off lights and computers when not in use
- A \$25 rebate for home energy audits (for Burlington residents) in 2004 and 2005.

Now that the city has a fairly strong corporate energy management program under development, it is time to focus resources on the community side. Based on the above noted measures, we are not starting from ground zero.

One of the commitments in the PCP program is to develop a community action plan and implement a greenhouse gas emissions reduction target. Some municipalities are opting to complete community energy plans to meet the PCP requirements. On June 13, 2011, staff presented a background information report (*Report CSI-13-11*) to Council on community energy planning, which was supported by both the Burlington Sustainable Development Committee and BurlingtonGreen. This report presents a terms of reference to complete a community energy plan in partnership with Burlington Hydro.

Discussion:

Community Energy Plans

In most cases, community energy plans (CEPs) are stand-alone documents, separate from an overall sustainability plan. The plan can be developed in phases, and can include but not limited to: a completion of an energy baseline and community energy mapping; identification of areas where conservation and efficiency measures can be focussed; an assessment of local generation potential, including the use of renewable energy; an analysis of land-use planning issues and their energy implications; and recommended actions for moving forward.

A CEP can help tie all of these initiatives together, identify gaps, opportunities, and potential synergies, to ensure our

community continues to build on conservation practices, using energy more efficiently and appropriately. For example, using electricity for heating is not the most efficient use of this type of energy. Consideration should be given to options available, such as waste heat from existing processes.

CEPs can be integrated with new developments, existing neighbourhoods, industrial areas, whole communities and even on a regional basis. They can significantly improve energy performance by capitalizing on opportunities and synergies available at the local level by integrating physical components from multiple sectors, including energy supply and distribution, transportation, housing and buildings, industry, water, waste management and other local (or regional) community services; and land use and community form.

Related Initiatives

Staff will coordinate the development and recommendations in the CEP with two other key initiatives, including the Official Plan (OP) and the implementation of the Strategic Plan directions. The OP in particular is a document to help guide the future growth and development of the city, which can have a significant impact on how energy is used in the community where buildings and neighbourhoods are built to sustainable development principles, supportive to pedestrians, cyclists and transit. The CEP will support the development of future OP policies related to sustainable growth and energy planning. It is also expected that there will be an inter-relationship with the upcoming transportation master plan given the level of energy used in this sector.

Strategy/Process

Burlington Hydro and city staff have been working in partnership, along with Burlington Hydro's Conservation Officer to develop the terms of reference for the community energy plan. Community engagement will be a key part of the process.

A copy of the Terms of Reference (ToFR) can be found in Appendix C and is summarized here:

Community Energy Plan Terms of Reference – Summary

Proposed Vision

To achieve a community that is efficient in how it uses energy through new development and retrofits, land use and transportation planning, energy generation (including the use

of renewables) and conservation, and industrial processes to reduce its reliance on the use of energy and its carbon footprint, and improve local energy security.

Objectives

The objectives of the plan are:

That the Community Energy Plan promotes economically viable and environmentally sustainable solutions.

That the process to develop the Community Energy Plan allows for meaningful public engagement and input.

That the Community Energy Plan supports sustainable energy policies and practices in the City of Burlington's planning for community development, transportation and transit services.

That the Community Energy Plan supports the City of Burlington's participation in the Federation of Canadian Municipalities' *Partners for Climate Protection* program.

Scope

- **Background information** – inventory of existing energy initiatives & GHG emissions
- **Energy efficient improvements** – conservation measures, operational efficiencies, related land use policies, etc.
- **Smart grid**- demonstration project
- **Sustainable transportation initiatives** - greening fleets & electric vehicle infrastructure
- **Improved energy utilization** – renewable and community energy systems
- **Improved environmental and economic performance** – performance measures
- **Community awareness** – conservation opportunities; progress of plan
- **Plan implementation** – resources & prioritization
- **Evaluation & monitoring** – performance measures, review of plan, etc.

Community & Staff Engagement

City staff and community members will be engaged at key points in the study. Highlights include:

- A community advisory committee representing key stakeholders to provide guidance, feedback and suggestions
- Use of social media, internet, community surveys, workshops, special events, etc.

A separate report on a community and staff engagement plan will be forthcoming.

Project Team – Steering Committee	President & CEO, Burlington Hydro; Executive Director, Corporate Strategic Initiatives; Sr. Sustainability Coordinator, Corporate Strategic Initiatives; and, Conservation Officer, Burlington Hydro
Advisory Committee to Project Team	Burlington Economic Development Corporation, Joseph Brant Memorial Hospital, Burlington Sustainable Development Committee, Halton Region, Union Gas, and the Ontario Power Authority
Study Timeline	Approximately 18 months; January – June 2013

Report Consultation

Staff consulted with the Sustainable Development Committee, BurlingtonGreen, the public involvement coordinator, planning staff (O.P. team) and the energy management coordinator on this report. Discussions have occurred with Burlington Economic Development Corporation, Union Gas, Halton Region, Joseph Brant Memorial Hospital, and the Ontario Power Authority. As noted above, further staff and public engagement will occur during the development of the community energy plan.

Financial Matters:

Burlington Hydro will contribute the majority of the funding to develop the community energy plan, covering the cost of the energy consultant to develop the plan and the community engagement activities.

Through the approved 2012 capital budget, \$75,000 (ST-MP-1409) has been earmarked to support the development of baseline data, third party analyses and verification of data, and to support the stakeholder engagement process.

Total Financial Impact

\$75,000 (City's contribution)

Source of Funding

2012 Capital Budget

Other Resource Impacts

Staff time – CSI Executive Director and Sr. Sustainability Coordinator. Additional support will be required as needed from energy staff, sustainability project coordinator, coordinator of strategic initiatives, Planning and Building staff, public involvement coordinator, and potentially Transportation, Engineering and Transit staff.

Environmental Matters:

How much energy we consume in our community is directly related to how we build buildings, develop neighbourhoods, source our energy, run our businesses, and plan for safe, efficient and sustainable transportation networks. It is appropriate timing that the Official Plan is also under review, given the linkages between the built environment and energy consumption. Staff from CSI (sustainability) and Planning will work closely to coordinate the two undertakings to ensure that policies and recommendations are complimentary.

It is also worth noting that the [Canadian Council of Chief Executives](#) (CCCE) recently released a report entitled: “Energy-wise Canada; Building a Culture of Energy Conservation”. Canada benefits from opportunities in low and non-carbon fuels, along with traditional fuels and technologies, and sustainable transportation technologies. “This opportunity brings significant national benefits – economic growth, jobs, training, research and new technologies, not to mention additional revenues to all three levels of government.” The CCCE makes the case that “Canada must adopt a multi-pronged strategy, bringing on more and varied supply of energy to meet growing domestic and international demand for energy while also investing in advanced technologies that can create new business and employment opportunities...” However, it must begin with a renewed commitment to energy conservation and the efficient use of existing and future sources of energy. “The cheapest form of energy is the unit that is not used.”

A CEP that identifies opportunities to improve energy efficiency within our community, to use clean, green sources of renewable energy and ensure that the most appropriate type of energy is used for a particular purpose or function, can only help to reduce local air and greenhouse gas emissions.

Communication Matters:

Staff will be working with Burlington Hydro to develop a detailed community engagement strategy to ensure public input is provided throughout the development of the CEP. Staff will also consult with the city’s community relations staff and public involvement coordinator.

Conclusion:

The development of the CEP provides us with an opportunity to look at how we use and source energy differently in our community, to identify efficiencies, make use of renewables, foster economic development opportunities and to continue to raise awareness about the importance of conservation. The end result of the CEP should help us adopt an environment of conservation, improve the management of energy resources, increase energy security, particularly in the face of climate change impacts, and reduce our community carbon impact. It should also help the city foster partnerships in the community as we work together to develop and implement the plan.

Respectfully submitted,

Lynn Robichaud
 Sr. Sustainability Coordinator
 905-335-7600 x7931

Appendices:

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| A. Agenda for Action – corporate update
B. Community Energy Plan – Terms of Reference |
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Notifications:
 (after Council decision)

Name	Mailing or E-mail Address

Approvals:

*required

_____ *Department _____ City Treasurer _____ General Manager _____ City Manager

To be completed by the Clerks Department	
Committee Disposition & Comments	
	01-Approved 02-Not Approved 03-Amended 04-Referred 06-Received & Filed 07-Withdrawn
Council Disposition & Comments	
	01-Approved 02-Not Approved 03-Amended 04-Referred 06-Received & Filed 07-Withdrawn

APPENDIX A – Agenda for Action Update

Action	Status
<p>Goal #1: Assign responsibility for energy management through the corporate facility management review process.</p>	<p>As a result of a corporate restructuring exercise, a new department called Corporate Strategic Initiatives was formed on January 1, 2009. Energy management and asset management falls within that department.</p> <p>Energy management update reports were presented to Council in 2009, 2011 and 2012.</p>
<p>Goal #2: Implement systems to track, monitor and report on corporate energy demand and consumption for electricity, natural gas, and water, providing the necessary financial and staff resources to administer them.</p>	<p>An energy management tool was implemented in 2010.</p>
<p>Goal #3: Identify and ultimately implement a sustainable building standard for new and retrofit city facilities such as LEED® or Green Globes, with an emphasis on energy efficiency. Consideration should be given to the use of renewable energy.</p>	<p>A Corporate Sustainable Building policy was adopted by Council in May 2010. The city now has three buildings built to LEED® standards. They include the Burlington Transit Operations Centre expansion (built to LEED® silver); the Performing Arts Centre (built to LEED® certification); and Fire Station No. 8 which has a solar wall and solar PV panels (built to LEED® silver). Final LEED® ratings are pending.</p> <p>In addition, Tansley Woods Community Centre has had a fully operational solar thermal installation since mid 2010. This installation was the largest in Canada at the time.</p>
<p>Goal #4: Develop and adopt a green purchasing policy or standard with guidelines to assist staff with implementation (e.g. require ENERGY STAR® rated appliances and office equipment).</p>	<p>On November 28, 2011, the city's procurement by-law 69-2005 was amended through by-law 93-2011 to include green procurement. Additional information can be found in the staff report, guidelines and checklist (note: the guidelines and checklist are living documents and will be updated as necessary). Staff training will be developed and rolled out in 2012.</p>

<p>Goal #5: Green the corporate fleet to minimize overall fuel consumption and emissions by right sizing vehicles in relation to job function at the time of leasing or purchasing. Opportunities will also be identified where appropriate to increase the use of cleaner fuels.</p>	<p>Greening the Corporate Fleet Transition Strategy was adopted by Council in June 2008. Prior to new or replacement vehicles being approved, a “City of Burlington – Assessment to Right Size Fleet Vehicles” must be completed and signed by the director and general manager.</p>
<p>Goal #6: Implement a plan to replace remaining traffic signals with LED fixtures.</p>	<p>Completed in 2008. Media release.</p>

APPENDIX 'B'
Partners for Climate Protection Program (PCP)

The following provides an outline of the PCP milestones and an update on the City's participation in the program.

MILESTONES	DESCRIPTION	UPDATE
Milestone One – Inventory	Participants are advised to complete a greenhouse gas inventory (corporate & community) using 1994 as a base year.	Greenhouse gas (GHG) emissions inventory was completed in 2005. An update of the community inventory is needed.
Milestone Two – Setting the Targets	Participants must set reduction targets. The PCP program recommends reduction targets of 20 per cent for municipal corporations and six per cent community wide. Some municipalities have opted to develop their local action plans prior to setting their reduction targets.	The city has adopted a corporate GHG reduction target: Reduce GHG emissions by 20 per cent on a per capita basis from 1994 levels. It was set based on per capita due to the population growth the city continues to experience. A community reduction target remains to be set.
Milestone Three – Develop Local Action Plans	Local Action Plans should be developed on how municipalities will reduce corporate emissions and encourage community wide reductions.	Most municipalities opt to develop two action plans; one based on corporate actions and one based on community actions. The city developed the <i>Agenda for Action</i> and is now working on a corporate energy management plan. In 2008, council endorsed the ' <i>Greening the Corporate Fleet Transition Strategy</i> '. A community action plan remains to be developed.
Milestone Four – Implementation of Plans	Municipalities implement their action plans.	The <i>Agenda for Action</i> has been implemented. Many corporate actions have been implemented related to energy conservation and the use of renewable energy, reducing the city's GHG emissions. Although a formal community action plan (or energy plan) has not yet been developed, numerous actions are taking place in the community to conserve energy and use renewable energy sources.
Milestone Five – Measuring Progress	Municipalities must track, monitor and report their progress in reducing emissions.	A corporate energy tracking system has been implemented.



APPENDIX C

Community Energy Plan Terms of Reference March 5, 2012



Introduction

Burlington Electricity Services Inc. (BESI) has undertaken to produce a Community Energy Plan (CEP) in partnership with the City of Burlington.

The City of Burlington is continually facing challenges to maintain existing infrastructure, manage sustainable community growth, provide an attractive economic climate for its businesses and residents, while protecting and enhancing the natural environment. These challenges are further impacted by the cost of energy. Prudent community planning, sustainable building and local economic development practices, and the provision of a viable mix of energy reduction (conservation) measures can help to reduce energy consumption, as well as improve local energy security.

Background

The City of Burlington has a population of approximately 170,000 with an above average household income. Local businesses include many diversified high technology research and manufacturing facilities.

Businesses and residents have demonstrated uptake of energy efficiency programs available through Burlington Hydro Inc. (BHI) and funded by the Ontario Power Authority (OPA) that exceeds provincial averages. Burlington Hydro has further assisted residents and businesses through the facilitation of electricity grid interconnections made available via the OPA Feed-in-Tariff Programs (FIT and MicroFIT) to enable renewable energy sources to sell power to the "grid".

The Corporation of the City of Burlington has demonstrated a leadership role within its own facilities by undertaking extensive energy conservation retrofits. Its most recent strategic plan, *Burlington, Our Future*, promotes lower energy use through the use of renewable energy, a Community Energy Plan, community planning that supports transit, cycling and walking, and

utilization of the resources of GridSmartCity and Burlington Hydro to positively effect energy conservation and planning.

GridSmartCity has successfully demonstrated that it can bring together a diverse range of members, including smart grid component manufacturers and service providers, higher education, distribution utilities (electricity and natural gas) and entities such as Ontario Power Generation (OPG), Independent Electricity System Operator (IESO), and the Electrical Safety Authority (ESA).

It is important to highlight other city initiatives that are related to growth, development, and transportation services, which have an inter-relationship with community energy planning. The local built form and our mobility choices can have a significant impact on how we use energy. It is expected that the community energy plan exercise will also help to inform the Official Plan review and transportation master plan study.

Proposed Vision

To achieve a community that is efficient in how it uses energy through new development and retrofits, land use and transportation planning, energy generation(including the use of renewables) and conservation, and industrial processes to reduce its reliance on the use of energy, reduce its carbon footprint, and improves local energy security.

Objectives:

The objectives of the plan are:

That the Community Energy Plan promotes economically viable and environmentally sustainable solutions.

That the process to develop the Community Energy Plan allows for meaningful public engagement and input.

That the Community Energy Plan supports sustainable energy policies and practices in the City of Burlington's planning for community development, transportation and transit services.

That the Community Energy Plan supports the City of Burlington's participation in the Federation of Canadian Municipalities' *Partners for Climate Protection* program.

Community Energy Plan Scope

The Community Energy Plan will examine the following:

- ✓ ***Background information***
 - GHG emissions community based inventory
 - Inventory of existing initiatives (e.g. conservation programs, use of renewable energy, local generation, Official Plan review)

- ✓ ***Energy Efficiency Improvements***

- Optimal Land Use Planning
 - Increased residential, industrial and institutional uptake of energy efficiency designs and equipment
 - Improvements to industrial and institutional operating practices
 - A specific plan to increase the City's streetlighting efficiency and support the energy efficiency program for the City's facilities
- ✓ **Smart Grid**
- Demonstration Project to build a Greenfield Smart Grid Community including self-healing electricity distribution, back-up power, integration of in-home energy management systems, renewable energy generation and electric vehicle infrastructure.
 - Efficiency associated with consumer electricity, water and natural gas meter data collection through Automated Metering Infrastructure (AMI)
- ✓ **Sustainable Transportation Initiatives**
- Feasibility of green or sustainable fleet initiatives for private entities
 - Feasibility of the development of community infrastructure to support the use of electric vehicles in Burlington
 - Demonstration of the viability of an electric vehicle fleet for a public entity (City of Burlington Department)
- ✓ **Improved Energy Utilization**
- Increasing the uptake of renewable energy technologies and programs
 - Review opportunities for community or district energy plants
 - Alternative fuel use
- ✓ **Improved Environmental and Economic Performance**
- Set performance measures to monitor implementation
- ✓ **Raise Community Awareness**
- Opportunities to improve energy efficiency
 - Progress of Community Energy Plan
- ✓ **Implementation Plan**
- Identify resources required
 - Prioritize actions – short, medium & long term
- ✓ **Evaluation & Monitoring**

- Determine performance measures
- Reporting back schedule
- Review & update plan

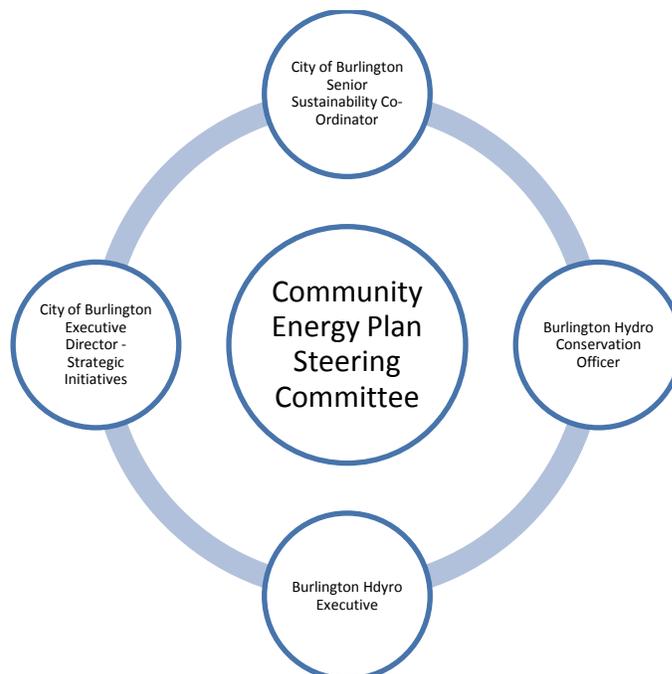
Community Engagement

The community will be engaged through:

- A community advisory committee –
 - Will provide representation of the different stakeholders within the community
 - Provide feedback of proposed actions/initiatives and suggest alternative actions
- Social Media, internet, community surveys, workshops, special events, etc.
- Key points for community engagement will include:
 - Development or confirmation of vision statement
 - Review of proposed actions/initiatives
 - Review of draft plan
 - Final report to council

Community Energy Plan Project Team

A steering committee will govern the delivery of the Community Energy Plan. The team will be comprised of:



The Steering Committee will be responsible for:

- Identifying the energy vision for the community, mission statement, goals and objectives
- Identifying the community priorities and needs

- Assessing the resources available and potential partners
- Preparing a draft list of potential short, medium & long term actions
- Developing a draft implementation plan
- Monitoring and evaluating individual projects and periodically reviewing the entire plan

Community Energy Plan Advisory Committee

An Advisory Committee will provide support to the Steering Committee. The team will be comprised of:



Timeline

The Community Energy Plan Project Team will develop a public consultation and project delivery schedule to ensure the project is completed within 18 months by June 2013.