



# HALDIMAND COUNTY ENERGY PLAN

## Energy Management Plan

### Haldimand County

From: 2013-01-01 to 2018-12-31

#### Commitment

##### Declaration of Commitment:

Haldimand County will allocate the necessary resources to develop and implement a strategic energy management plan that will reduce our energy consumption and its related environmental impact.

##### Vision:

The Corporation of Haldimand County will continue to reduce energy consumption and mitigate costs through the wise use of energy. This will involve a collaborative effort to increase the education, awareness and understanding of energy management with the Corporation.

The vision for the Corporation, as aligned with the Three Pillars of Strategic Growth and Development:

- To reduce total energy consumption and transition to a carbon neutral future through the wise and efficient use of energy and resources, while still maintaining an efficient and effective level of services to our customers and the general public; and
- To create a healthy, reliable and sustainable energy future by continually increasing the effectiveness of how we use and manage our energy and water resources.

Total energy consumption includes electricity, natural gas, diesel, gasoline, fuel oil and propane.

This vision can be achieved through the integration of energy efficiency facility infrastructure, operational efficiencies and building the foundation for a culture of energy awareness and knowledge within the Corporation. At the organizational level, a commitment from Council and Senior Administration will demonstrate the leadership and dedication required to ensure the fulfillment of the Energy Plan by all energy consumers. Everyone has a role in the wise use of energy and to showcase the appropriate leadership within the Corporation's facilities and operations.

##### Policy Statement:

Haldimand County continues to face rising costs to maintain and repair aging infrastructure, to deliver services to the community and to obtain the necessary energy to power its facilities and fleet of vehicles. The generation and use of energy also contributes to climate change through greenhouse gas (GHG) emissions.



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Four fossil fuel electricity generating stations remain in operation in Ontario, although the provincial government has committed to de-commissioning the coal fired stations by 2014. Natural gas, another source of greenhouse gas emissions (although cleaner than coal), is relied upon as a source for heat for County facilities.

The development of a comprehensive energy management program will ensure that energy conservation and efficiency is a key consideration in the County's facility renewal actions.

The implementation of conservation measures will reduce corporate GHG emissions and energy costs for County facilities through decreased energy consumption. Simple measures, e.g. lighting retrofits, can result in short payback periods of less than two years. Longer payback periods may be experienced for larger capital investment items such as HVAC (heating, ventilation and air conditioning).

The first step in implementing an energy management program is the completion of energy audits for corporate facilities. Audits involve a technical review of a facility and its operations, the development and analysis of a baseline energy profile for the facility and identification of energy management opportunities and savings.

Another important component of an energy management program is the re-commissioning of County facilities. Over the life cycle of a facility, the mechanical building automation and distribution systems are adjusted from day-to-day to suit user room temperature requirements. Moreover, mechanical distribution or building controls instrumentation is sometimes over-looked when renovations take place. Re-commissioning involves examining the original mechanical design and operating specification against any building renovations and recalibrates the settings to suit today's energy efficient standard practices. It also ensures that mechanical operating practices are current and appropriate to maximize building system efficiencies.

The use of renewable energy measures can also help reduce overall corporate GHG emissions by lessening our demand for fossil fuel generated energy (oil, gas or coal). The investment for these types of measures can be significantly greater than conservation initiatives and therefore, should be considered on a case-by-case basis through a cost and environmental benefits analysis. However, it is acknowledged that the use of technologies such as wind, solar and geothermal can show community leadership and help raise awareness of the benefits of utilizing renewable energy.

The success of the energy management program can only be determined through the measurement of savings. The implementation of an energy tracking tool can help the corporation monitor progress, provide constant and consistent reports to ensure efficiencies in facility operations, identify successful retrofits that can be replicated in other facilities, highlight problem areas or facilities, as well as track and report on GHG emissions.

In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. Although facilities staff has the lead responsibility in ensuring County facilities operate efficiently, all County staff should be familiar with and utilize energy efficient measures where possible. The issue of an adequate and reliable supply of electricity in south-western Ontario has also been raised as a concern by the Ontario Power Authority due to growth and the scheduled closures of fossil fuel generating plants in Ontario. Energy conservation and demand management (reducing energy usage during periods of peak demand) are important measures to help safeguard against an already strained transmission system



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### Goals:

Haldimand County's Corporate Energy Conservation Plan (ECP) is designed to achieve the following goals:

- Maximize fiscal resources through direct and indirect energy savings
- Reduce the environmental impact of the County's operations
- Maintain or increase the comfort and safety of staff and patrons of Haldimand's facilities
- Improve the reliability of County equipment and reduce maintenance
- Provide guidance and leadership necessary for the adoption of a culture of sustainability
- Reduction of the overall carbon footprint of the County

The primary objective of this plan is to improve the management of the County's energy consumption. Part of this objective is setting a conservation target that will see Haldimand County reduce its 2012 energy consumption by 4.5% by the end of 2016. It is also the objective of this plan to improve the County's understanding of energy consumption which is essential for the County to meet its corporate energy management goals.

The measurement of success will be based on a variety of indicators:

- Reaching the Energy Conservation Plan's energy conservation target
- Measured reduction in the Corporation's Greenhouse Gas emissions
- Achieving savings in operational costs
- Imbedding energy management in the County's Capital Budgeting

### Overall Target:

The key to a successful long term energy Conservation and Demand Management (CDM) vision is a strong Energy Policy, with measurable and achievable targets. The Energy Policy calls for targeted energy reductions in energy intensity of County owned facilities and operations of:

- 4.5% by 2016
- 9.0% by 2020

These targets equate to about a 1.5% reduction in energy per year. 2013 has been established as the County's base year that energy reduction results will be measured against, as accurate energy data is available through monitoring energy consumption since January 1, 2013. The Energy Reduction Target will be applied to each County department or division's overall energy usage on a proportional basis. This means larger energy users in the County must achieve the same reduction on a percentage basis in relation to their 2013 base year consumption, but their overall contribution to energy, cost and emission reductions will be much larger overall.

### Objectives:

1. To implement energy audits on all significant municipal facilities during the next five years;



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2. To reduce total energy consumption in municipal facilities, normalized to weather conditions, by 1.5% over the next three years;
3. To review impact (return on investment) for replacement of aging infrastructure resulting from energy audits.

### Organizational Understanding

#### Stakeholder Needs:

Internal stakeholders (Council, CAO and staff) need to be able to clearly communicate the corporate commitment to energy efficiency, and to develop the skills and knowledge required to implement energy management practices and measures. External stakeholders (the Province, community citizens and groups) need the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services.

#### Municipal Energy Situation:

##### Municipal Energy Data Management

While Haldimand County has an admirable history of managing its energy consumption, the Ontario government has required an increase in efforts towards municipal energy management. This results in the need to enhance current practices and develop new approaches. To meet this need Haldimand County will design a comprehensive program for collecting and analyzing quarterly energy billing information, and ensuring staff is informed about energy consumption.

This effort will produce an energy cost and consumption database that will be used for monitoring excessive variations, targeting facility follow-up evaluations, and highlighting areas that could be candidates for improved conservation. These monitoring enhancements will improve the County's understanding of the bottom line impact of energy management.

##### Energy Supply Management

Haldimand County has worked with senior levels of government and public agencies to improve its energy procurement strategy. In 2011, Haldimand pursued cost mitigation by enrolling in the Local Authority Service (LAS) Spot Market energy hedging and procurement strategy and staff will oversee its implementation. As Haldimand County continues to grow and the complexities of the energy portfolio increases, the County will require a focused effort on the monitoring of the corporate energy load and the practices of industry retailers.

Haldimand County's energy procurement goal will continue to be the pursuit of optimal rates while achieving an appropriate level of cost certainty.

##### Energy Use in Facilities

Haldimand County facility staff has retained a great deal of knowledge with regard to their facility's energy use. Through the deployment of energy management software where possible, staff will be equipped with the information necessary to make effective energy management decisions.



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This will make it possible to implement an effective energy procurement process, pursue appropriate capital projects, and implement successful conservation and demand management programs.

### Equipment Efficiency

Haldimand County has pursued many measures to improve the energy efficiency of municipal equipment. Some of these measures include interior lighting upgrades, conversion to LED exterior lighting and the consideration of solar thermal and solar photovoltaic applications at County facilities. As the understanding of corporate energy consumption improves, staff will be equipped with the knowledge necessary to make informed decisions. This improved understanding will also reveal how simple actions like commissioning and maintenance procedures can improve existing equipment efficiencies.

### Organizational Integration

Day to day management of energy has been primarily the responsibility of facility managers. With the creation of an interdepartmental energy management team, improved energy monitoring and feedback, and interactive energy training and awareness, current practices will be enhanced. Staff across all departments will be given the necessary tools to address corporate energy concerns such as budgeting, procurement, conservation and generation.

### **Renewable Energy Utilized or Planned:**

Haldimand County aspires to show leadership in the promotion and development of renewable energy systems that are compatible with our asset management and land use planning objectives. As a result, we will investigate the potential to develop solar photovoltaic systems on the rooftops of all new corporate facilities with sound, south-facing roofs.

## **Strategic Planning**

### **Links with other municipal plans:**

As an integral component of the management structure, the energy management plan is coordinated with the municipality's budget planning process, preventative maintenance plans and the overall asset management plan.

## **Resources Planning**

### **Energy Leader:**

The Senior Management Team (SMT) approved the development of a cross-functional team of corporate stakeholders having direct responsibility in the consumption of energy within their respective departments. This committee's mandate is to ensure that the Energy Plan remains a priority within each operation.



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The Energy Committee meets quarterly with the following objectives:

- To develop strategies within operations to work towards reducing energy consumption to meet the stated targets
- Integrate best practices into daily operations, where feasible, to reduce energy consumption
- Provide a forum for discussion on energy management strategies that may benefit all divisions
- Increase corporate awareness of the consumption of energy within each department

The General Manager of Community Services serves as the Chair of the Energy Committee.

### Procurement Planning

#### Energy Purchasing:

Haldimand County currently is a member of the Local Authority Services (subsidiary of AMO) initiative for hydro procurement. Haldimand County will continue the negotiation of energy purchase contracts that appropriately addresses cost considerations, available energy services, energy quality and reliability, and other performance factors.

### Implementation Planning

#### Building Standards:

Haldimand County will develop criteria for the design and/or acquisition of new buildings that include energy performance factors and that use, as appropriate, the principles embedded in performance standards such as LEED (Leadership in Energy & Environmental Design) and the Model National Energy Code for Buildings.

### Projects Execution

#### Municipal Level:

In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. Although facilities staff has the lead responsibility in ensuring county facilities operate efficiently, all county staff should be familiar with and utilize energy efficient measures where possible.

#### Asset Level:

Haldimand County uses department and facility energy team representatives to facilitate the implementation of facility level business procedures and communication initiatives, including energy performance reporting.



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### Review

#### Energy Plan Review:

As part of any energy management strategy, continuous monitoring, verification and reporting is an essential tool to track consumption and dollar savings and/or avoidance as the result of implemented initiatives. Currently the Energy Committee is responsible for providing an annual progress report with energy consumption data and initiatives undertaken within the calendar year through the legislated reporting requirement of the Green Energy Act.

As part the Energy Conservation Plan, the implemented processes improvements, program implementation and projects will continue to be documented and reviewed annually to update consumption savings. By regularly monitoring and reporting consumption and dollar savings and/or avoidance to departments, the outcomes of their participation in energy management initiatives can be demonstrated and feedback can be obtained for any new ideas.

Reporting of the corporate energy management initiatives and consumption data will be presented to Council through the Energy Conservation Plan Annual Report. This monitoring and reporting will also align with the requirements of the Green Energy Act's Conservation Plans to develop energy conservation plans

### Evaluation Progress

Haldimand County will evaluate the Plan annually through the reporting requirements of the Green Energy Act and the quarterly review of consumption by the Corporate Energy Management Committee. Minor adjustments will be made as necessary while significant or major changes will be vetted through the Energy Management Committee and the corporate budget process.