



Energy Conservation
and Demand Management Plan

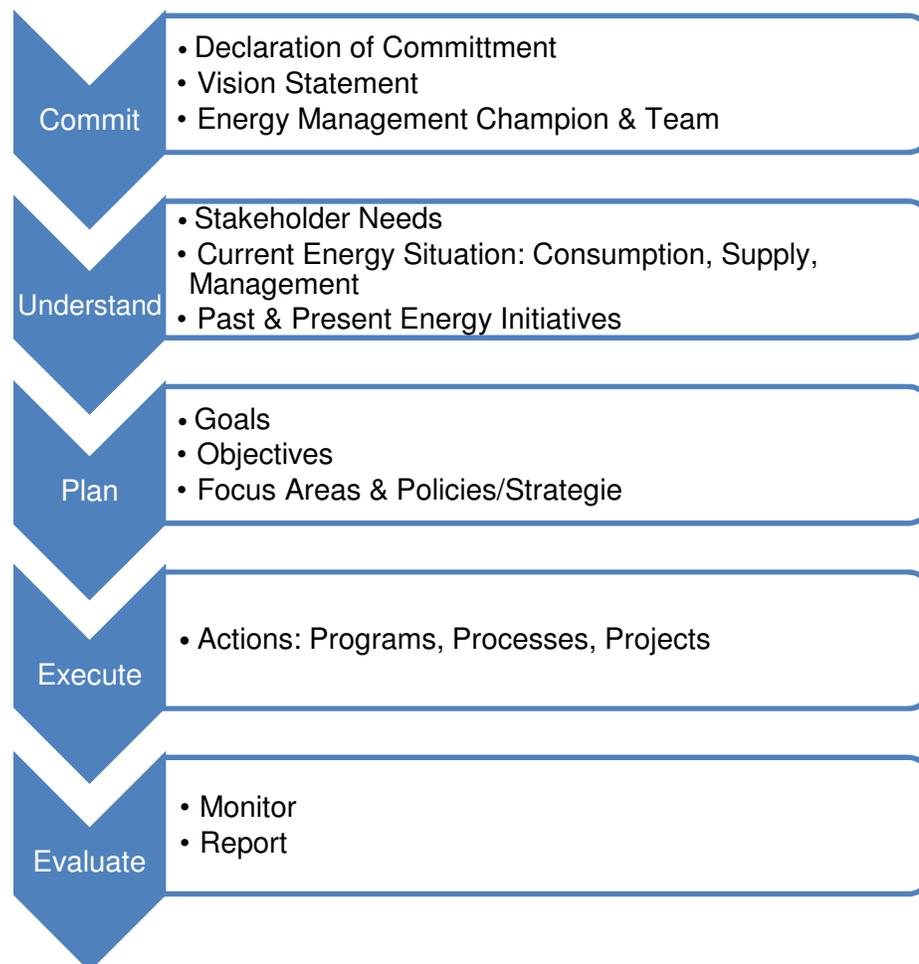
June 2014

Purpose

Ontario Regulation 397/11, Energy Conservation and Demand Management Plans, requires all broader public sector (BPS) organizations, including hospitals, municipalities, universities, colleges, school boards and municipal service boards responsible for water and sewage treatment and pumping operations to report on their annual energy use and greenhouse gas (GHG) emissions in designated buildings/facilities by July 1 beginning in 2013; and develop and implement a 5-year Energy Conservation and Demand Management Plan (CDM) by July 1, 2014.

The Conservation and Demand Management Plan should contain policies that the Township will implement to add energy efficiency to the forefront of decision making processes with regard to capital projects, infrastructure, budget, employee training and daily operations.

Figure 1 - Energy Management Plan Framework



Section 1 - Introduction & Background

Successful energy management depends on the integration of energy efficient practices into the “business as usual” conduct of the organization, is based on a regular assessment of energy performance, and requires the implementation of procedures and measures to reduce energy waste and increase efficiency. Regardless of the size of the municipality, the common element of successful energy management is the allocation of staff and resources to continually improve energy performance.

Section 2 - Our Commitment

Effective energy management begins with the specific, visible expression of commitment by the senior authorities in the Municipality to making the reduction of energy consumption an organizational priority. At a minimum, this commitment includes a resolution by Municipal Council articulating the staff mandate to plan and implement measures for energy efficiency improvement.

Declaration of Commitment:

The Township of Cavan Monaghan is committed to undertaking economic measures to increase energy efficiency as a means of limiting the production of greenhouse gas emissions.

Vision:

We are continually reducing our total energy consumption and associated carbon footprint through wise and efficient use of energy and resources, while still maintaining an efficient and effective level of service for our clients and the general public.

Energy management leader and team:

Energy Leader:

Kyle Phillips, Chief Building Official and Gerry Barker, Manager of Facilities have been designated as our energy leaders with overall responsibility for corporate energy management.

Energy team:

We have appointed the following employees/positions to act as departmental energy efficiency team members:

Yvette Hurley, CAO

Kimberley Pope, Director of Finance/Treasurer

Bridgette Ayotte, Economic Development Co-ordinator

Bill Balfour, Fire Chief

Karen Ellis, Director of Planning

Wayne Hancock, Director of Public Works

Section 3 - Our Understanding (Current State):

The Energy Management Plan requires a thorough understanding of the current corporate energy situation, including policies, programs, practices, and processes. Key areas of examination include energy data management, energy supply, energy demand, and energy use management. The strategic energy management plan includes these information outputs.

Stakeholder Needs:

Internal stakeholders (Council, Committees of Council, CAO, Staff) need:

- a) an up-to-date and relevant energy management plan with clear vision, goals, and targets in order to clearly communicate the corporate commitment to energy efficiency;
- b) timely, regular reports and information to maintain awareness of energy use; and,
- c) training and support to develop the skills and knowledge required to implement energy management practices and measures.

External stakeholders (residents, community organizations, businesses, Province) need:

- a) the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services; and,
- b) the municipality to reduce the carbon footprint associated with its corporate energy use

Current Municipal Energy Situation:

Energy Consumption and Demand:

The current energy usage by building is detailed in the attached spreadsheet - (Appendix A) 2012 energy consumption, cost and GHG emissions).

How Energy Is Currently Managed:

The management of our energy is a combination of energy data management, energy supply management, and energy use management.

Energy Data Management: Our municipal energy data is managed through the LAS Energy Planning Tool. The data is received via supplier invoicing then tracked and/or monitored using the LAS Energy Planning Tool.

Energy Supply Management: Our municipal energy is supplied via a number of providers as outlined below:

- **Electricity** is supplied by HydroOne on an as needed basis and is priced at the standard rates offered by the provider.
- **Natural Gas** is supplied by Enbridge on an as needed basis and is priced at the standard rates offered by the provider.
- **Propane** is supplied by Casey's on an as-needed basis and is priced at the standard rate offered by the provider.
- **Vehicle fuel** is supplied by Suncor Energy Products Partnership for diesel and Upper Canada Fuels for gasoline on an as needed basis and is priced at the standard rate offered by the retailer at the time. The fuel is purchased on an as needed basis by the operator of the vehicle.

Energy Use Management: Day to day management of energy has been primarily the responsibility of facility managers. The tool that will be available to the facility managers to aid in their efforts to reduce energy use will be LAS' Energy Planning Tool (EPT).

Section 4 - Our Plan:

Based upon a clear understanding of the current energy practices, the plan can now be developed. It begins with goals which support the vision, followed by objectives which support the goals. Targets can be incorporated into the goals and/or the objectives. Areas of focus and associated strategies and/or polices can also be added.

Goals

- To improve the energy efficiency of our facilities by utilizing best practices to reduce our operating costs, energy consumption and greenhouse gas emissions.
- To maximize fiscal resources through direct and indirect energy savings.
- To reduce the environmental impact of Township operations.
- To improve the reliability of Township equipment and reduce maintenance.

Objectives

- Improve the Township's understanding of energy consumption
- Report energy performance changes and improvements
- Complete energy audits on all municipal facilities during the next five years
- To improve the efficiency of energy use through low-cost opportunities by implementing the following:
 - Employee training, and staff awareness.
 - Monitoring and tracking system.
 - Energy Demand Management program.
- A reduction in the energy intensity (energy per square foot/metre) of municipally owned buildings and operations of 5% by 2016 compared to fiscal 2011.

Focus Areas & Policies

The following section represents potential areas of focus and their associated strategies/policies.

Strategic:

- **Long-term strategic issues:** We will develop and implement energy policies, organize for energy management, develop the required skills and knowledge, manage energy information, communicate with our stakeholders, and invest in energy management measures.
- **Links with other municipal plans and management processes:** As an integral component of the management structure, the energy management plan is to be coordinated with the municipality's budget planning, strategic plan, purchasing policy, preventative maintenance plans, environmental management plan, asset management plan, and the policy development process
- **Departmental responsibilities:** We will incorporate energy budget accountability into departmental responsibilities.

Energy Management Leader and Team

Resources:

- **Energy leader:** Kyle Phillips, Chief Building Official and Gerry Barker, Manager of Facilities have been designated as our energy leaders with overall responsibility for corporate energy management
- **Energy team:** We will identify staff members and personnel from our critical service providers who carry significant responsibility for energy performance or who can make essential input to energy management processes.
- **Staffing requirements and duties:** We will incorporate energy efficiency into standard operating procedures and the knowledge requirement for operational jobs.

Staff training and communication:

- **Communication programs:** We will develop a communication strategy that creates and sustains awareness of energy efficiency as a corporate priority among all employees and conveys our commitment and progress to our stakeholders.

- **Energy Awareness Training:** We will develop and deliver training focused on the energy implications of employees' job functions and the day-to-day opportunities for conserving energy found in the workplace and at home.
- **Energy Skills Training:** We will develop and deliver skills training for operators, maintainers and other employees that have "hands-on" involvement with energy consuming systems in order to improve the team's ability to achieve energy efficiency improvements.

Development of Energy Projects

- **Internal assessments:** We will develop a methodology for the internal assessment of energy performance of municipal facilities and their energy loads. In addition, a process will be developed for identifying and cataloguing energy efficiency improvements.
- **Staff suggestions:** We will implement a dynamic process for submitting and processing staff suggestions for energy efficiency improvements.
- **Energy audits:** We will establish the criteria for energy audits for the requirement and frequency of municipal facility energy audits. The energy audits will be carried out based on the developed policy.

Investment in Energy Projects

- **Investment criteria:** We will develop and/or clarify as necessary the financial indicators that are applied to investment analysis and prioritization of proposed energy projects, taking due consideration of the priority given to energy efficiency projects versus other investment needs (life cycle versus simple payback).
- **Consideration of energy efficiency for all projects:** Life cycle cost analysis will be incorporated into the design procedures for all energy projects.
- **Budgetary resources for energy projects:** Energy projects will be integrated into our capital planning and budget development procedures.
- **Capital:** Savings and incentives from previous energy efficiency projects will be incorporated into our annual capital planning procedures as a separate envelope.
- **Other sources of funds for energy projects:** The Energy Team will be mandated to investigate, document, and communicate funding sources for energy projects, including government and utility grants and incentives.

Procurement

- Consideration of energy efficiency of acquired equipment: Our purchasing procedures will be modified as required to incorporate energy efficiency into the criteria for selection and evaluation of materials and equipment.
- Standards for new buildings: We 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 and the Model National Energy Code for Buildings.
- The Township will establish criteria in the Procurement Policy based on energy goals and objectives for the selection of external consultants and energy suppliers.
- The Township will further develop and clarify the necessary financial indicators that are applied to investment analysis of energy projects. This will help prioritize proposed energy projects and ensure that life cycle cost analysis are incorporated in the design procedures for all energy projects.
- The Township will continue to investigate participating in energy purchasing cooperatives where there are opportunities. These programs exist at both a local level and Provincial level. These opportunities need be examined with not only a focus on cost, but also include quality and reliability in the equation.

Section 5 - Our Execution:

All work completed on the plan to date culminates in the development of actions for execution. Generally, an action can be classified as a program, process, or project. In addition, all actions should be linked back to a particular objective developed earlier in the plan in order to ensure that they support the objectives, which in turn supports the goals, which in turn move the municipality towards its vision.

Type	Objective	Action	Cost / Savings Estimate	Owner	Target Date
Program	Awareness	Add energy awareness to Department Head meetings	Awareness	CAO	2014
Program	Training	Develop training protocol		CAO and Staff	2014
Program	Awareness	Help staff and the public understand the value in energy conservation through the use of the Township website		Website Administrator and all Departments	2014
Process	Awareness	Energy reports to be distributed to directors on an annual basis		Energy Leader	2014
Process	Procurement	Modify Township Procurement Policy		Director of Finance	2014
Project	Energy Efficiency	Enhance Building Envelope—such as caulking, weather-stripping, and insulation in all buildings in terms of energy use.	Cost: \$6,000 Savings: \$4,000/yr	Parks and Facilities Manager	2014
Project	Ground Mounted Solar Units	8 Installations of Solar Tracking Units various Township properties	8 Solar Tracking Units Installation in 2013 Cost: \$461,260 Revenues: \$64,000/yr	Director of Public Works	2014
Project	LED Street Lighting	Replacement of entire street light inventory from high pressure sodium to LED	Cost: \$43,771 Savings \$32,508/yr	Director of Public Works	2014-2015

Project	Small Business Lighting	Retrofit of existing lighting in 4 of the facilities.	Cost: \$2,876 Savings \$2,096/yr	Chief Building Official	2013-2014
Project	Window Upgrades	Window replacement at the Old Millbrook School	Cost: \$55,000 Savings: unknown	Manager of Facilities	2011
Project	Door replacement	Replacement of double doors at the Community Centre to a higher U-Value	Cost: \$3,450 Savings: unknown	Manager of Facilities	2014

Section 6 - Our Evaluation:

The results of our energy management plan will be evaluated by monitoring our progress towards our targeted performance, and by reporting the findings to our various stakeholders. In addition, our evaluation will include a review and update of the energy plan as necessary. The evaluation process is ongoing and provides the critical feedback that leads to continuous improvement.

Monitoring Progress

Ongoing monitoring of consumption: An energy monitoring and targeting (M&T) system will be implemented and maintained as an integral component of our management information system.

Review & Reporting

Reporting for the GEA: Reporting requirements for the Green Energy Act and other pertinent provincial legislation will be factored into our reporting procedures.

We will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis within our corporate planning/budget process.

References

County of Peterborough (November 2012). Energy Management Plan.