Energy Conservation and Demand Management Plan 2019-2024

Commitment

Declaration of Commitment:

The Township of Champlain continues to make all reasonable efforts to improve its energy management plan and program to reduce its impact on the environment as required under the *Electricity Act, 1998* and *Regulation 507/18 Public Sector Energy Reporting Conservation Demand Management Plans Act*.

Staff and Council will ensure that the objectives presented in this plan are achieved and that progress towards those objectives is monitored on an ongoing basis. Staff and Council will update the plan as required under the above *Act* and regulation or any subsequent legislation.

Vision:

The Township of Champlain's will continue with its vision of becoming an environmentally sustainable community. To this end, it is looking to reduce its total energy consumption and mitigating costs through the wise use of energy, while maintaining an efficient and effective level of service to the public. Wherever possible, the Township will endeavor to increase the awareness and understanding of energy management within the Corporation.

Policy:

The Township of Champlain will endeavor to incorporate energy efficiency into all areas of our activities including our organizational and human resources management procedures, procurement practices, financial management and investment decisions, and facility operations and maintenance. As a major component of the operating costs of municipal facilities and equipment, energy costs are factored into the lifecycle cost analysis and asset management analyses and policies of the municipality.

Achievements:

Since this plan was first developed, the Township has completed several energy reduction objectives. An energy audit of all of our facilities identified several areas where energy consumption could be reduced.

- New energy efficient dehumidifiers and chillers were installed at the arena;
- Upgraded insulation for the arena roof;
- Community centre refrigerators were replaced with energy efficient units;
- Insulated exterior doors installed on certain high traffic garage doors;
- All lights in offices and garages have been upgraded by replacing incandescent bulbs and fluorescent strips with LED bulbs or low energy fluorescent tubes and ballast;

- Three furnaces were replaced with high efficiency units;
- 758 streetlights were upgraded with the installation of LED bulbs. This upgrade alone saw a one year cost saving in electricity of $101,560 in the first year.
- Upgrades to the sewage lagoon will result in improved treatment of waste water, benefiting the environment;
- Three diesel powered backup generators in the waste water treatment stream were replaced with natural gas powered units

Goals:

As part of its ongoing commitment to its Energy Conservation and Demand Management Plan, the Township of Champlain has set the following as objectives for the near future:

- Replace six pumps at pumping stations with variable speed motors and add time of day usage timers to the system;
- Replace lighting over the ice in the arena with LED lighting.
- Complete the Inflow & Infiltration Study of the sewer system with the goal of reducing the amount of rainwater getting into the sewers and eliminating incidents where water bypasses the treatment plant during heavy storms. Solving these issues will significantly reduce the amount of water that needs treatment and therefore reduce the amount of electricity consumed.
- Replace all windows at Town Hall with energy efficient units;
- Continue efforts to identify opportunities to reduce the environmental impact of the Township's operations.

Overall Target:

The key to a successful long-term conservation vision is a strong Energy Policy with measurable and achievable targets. This policy calls for targeted energy reductions in energy usable by the Township owned facilities and operations on a continuous basis. Success will be measured by comparing consumption on a year-to-year basis. It is important to note that we must consider growth when calculating consumption.

Objectives:

In order to achieve our goals, the Township of Champlain has set the following continuing objectives:

- Improve the management of the Township's energy consumption. Periodic audits will help ensure this commitment's ongoing value;
- Set conservation targets for energy reduction;
- Improve its understanding of energy consumption;
- Implement a continuous improvement program for buildings and facilities
- Revise various municipal policies to reinforce the energy reduction program component;
- Reduce the Township's overall carbon footprint;
- Increase staff and Council awareness concerning energy efficiency; and
- Identify and seize renewable energy generation opportunities.

Organizational Understanding

Our Municipal Energy Needs

The Township of Champlain requires reliable, low-cost, sustainable energy sources delivered to the most efficient facilities and energy consuming technology as possible.

Stakeholders Needs

Council, the CAO and senior management must clearly communicate the corporate vision to staff and residents as well as acquire the skills and knowledge required to implement energy management practices and measures.

Municipal Energy Situation

Our assessment of organizational capacity for energy management with respect to energy policy indicates the following issues:

- Energy use and costs continue to increase and are forecast to further increase;
- Occasional efforts are made to raise general staff awareness concerning energy;
- Additional municipal responsibilities and services have had an important impact on existing facilities' energy consumption;
- The need to be vigilant in our ongoing search for energy saving solutions that match our various operational requirements.

How We Manage Energy Today

The management of the Township of Champlain's energy is a combination of energy data management, energy supply management and energy use management.

Our municipal energy is supplied via a number of providers: Electricity is supplied by Hydro One and natural gas by Enbridge Gas on an as need basis and is priced at the standard rates offered by the provider.

Summary of Current Energy Consumption, Cost and GHGs:

The Township's current energy usage is detailed in our latest *Energy Consumption and Green House Gas Emissions Report* for 2017. Our energy usage is updated once a year in the Energy Planning Tool (EPT) and reported annually to the Ministry of Energy.

Strategic Planning

As an integral component of the management structure, the Energy Conservation and Demand Management Plan will be coordinated with:

- The municipality's budget planning process;
- The purchasing policy;
- The policy development process as a whole.

Resources Planning

Energy Leader:

The CAO, in concert with the department heads assumes the overall leadership and responsibility for corporate energy management. Conceptualization of all projects will include energy savings as a leading requirement.

Internal Resources:

The Township of Champlain will develop criteria for determining whether internal resources can be utilized for the implementation of energy projects.

Energy Training:

The Township of Champlain will do its best to develop and deliver energy training for all relevant staff and Council members. The training will focus on the energy use and conservation opportunities associated with employees' job functions and will be utilized whenever possible.

Project Execution

Municipal Level:

Since all employees use energy in the course of their work day, all staff will share the responsibility of being aware of their energy use and will work towards a culture of conservation. Awareness of energy conservation issues and new initiatives will be passed on to staff via training, seminars and webinars. This will allow staff to see the results of their efforts and encourage them to bring forward any energy conservation ideas.

Asset Level:

In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. The first step in the continuation of our energy management program will be by conducting regular cost/consumption audits of the various energy products used by the municipality. Staff is then encouraged to seek out energy conservation opportunities.

Another important component of our energy management program is ongoing facilities maintenance and renovations. Any major maintenance program or renovation project will be required to take into account any possible energy conservation programs, technologies and best practices.

As the use of renewable energy measures can help reduce overall corporate greenhouse gas emissions, 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. 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. To this end, Township management will put forward to Council, for approval, any suitable renewable energy program or technologies as they become known.

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. The Township of Champlain staff will develop an annual progress report with the energy consumption data and will report to Council any progress that is achieved. Our annual Energy Planning Tool (EPT) report to the Province will be our overall tool for energy awareness.

Evaluation Progress

Energy Consumption:

The Township of Champlain will review and evaluate its energy plan, as necessary, on an annual basis as based on the Energy Consumption Reports submitted to the Ministry of Energy as required under the *Electricity Act* and Regulation 507/18.

Green House Gas Emissions

Governments at all levels are moving to address emissions of greenhouse gasses (GHGs), in light of scientific evidence on how human activities are affecting the world's climate. For more information on this science, see http://www.ipcc.ch/.

The combustion of fossil fuels in buildings is a major source of GHG emissions that fall under local government influence. Municipalities can lower emissions by improving energy efficiency of buildings and using more renewable energy.

The Township of Champlain is committed to both objectives through the development and implementation of this Energy Conservation and Demand Management Plan (CDM). On an ongoing basis, we will continue to track and report on GHGs as part of our regular reporting on energy consumption and will evaluate progress in this area against our overall reduction target.

Programs, Processes and Projects

Programs:

Program Description	Facility	Contact	Details	Due Date	Status
Add energy awareness to head of department meetings	All	CAO	Energy Reports are distributed to head of department on an annual basis for review and comment.	August	
Employee engagement	All	CAO	Provide staff with training and documentation required to adopt good practices that will result in the optimization of facility energy usage. This will be done by identifying the areas where employees could lower the energy usage and result in energy savings. We will also encourage employees to submit ideas for projects that will reduce the corporate and personal energy consumption. *Programmable thermostats were installed and as an example lower temperatures substantially in off hours and weekends.*	Ongoin	
Appliance & Electronic Usage	All	CAO	Appliances & electronics are often left on in our offices because staff feels their individual impact is not important, however, when totaled across the municipality, the impact can run in the hundreds of dollars per year for our municipality. All appliances and electronics devices such as printers, calculators, etc. are now all turned off at night and on weekends.	Ongoing	

Projects:

Project Description	Facility	Contact	Details	Due Date	Status
Use of programmable thermostats	All	CAO	The Township has installed programmable thermostats in several locations which will allow for adequate set-points to be maintained depending upon whether the space is occupied or not. The Township of Champlain will also be setting back temperatures by 0.5 degree Celsius, which should generate a net saving of about 1% saving for heating each building.	July 2015	Complete
Replace lighting	All	CAO	All existing lighting has been replaced with LED bulbs or energy efficient fluorescent strips and ballast.	July 2016	Complete
Replace six pumps at pumping stations	Pumping stations	Public Works Director	Replace six pumps at pumping stations with variable speed motors and add time of day usage timers to the system	October 2023	Ongoing
LED lighting at arena	Arena	Director Parks & Recreation	Replace all existing lighting over the ice surface at the arena with LED lighting	July 2022	
Inflow & Infiltration Study	L'Orignal & Vankleek Hill Wastewater Infrastructure	Director Public Works	Complete the Inflow & Infiltration Study of the sewer system with the goal of reducing the amount of rainwater getting into the sewers and eliminating incidents where water bypasses the treatment plant during heavy storms. Solving these issues will significantly reduce the amount of water that needs treatment and therefore reduce the amount of electricity consumed.	December 2019	Ongoing
Window Replacement	Town Hall	Director of Public Works	Replace all windows at Town Hall for energy efficient units	October 2019	Ongoing

Other projects will be added as the Township looks into the different areas where energy savings can occur.