

City of Kawartha Lakes

Corporate Energy Management Plan 2016-2021



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Introduction

The City of Kawartha Lakes Corporate Energy Management Plan satisfies the requirements of the Provincial Ministry of Energy's Regulation 397/11 to have a corporate energy management plan that quantifies consumption and describes demand management plans.

Executive Summary

Energy is one of the top 30 priorities identified by Council in the City of Kawartha Lakes Strategic Plan 2014 – 2018. An increased focus has been placed on reducing operating costs, preparing for rising utility costs and to demonstrate commitment to long term sustainability. Municipalities have direct influence over 48% of all energy consumed in Canada. In response, the Ontario Provincial Government is allocating significant funds and incentives to energy conservation and demand management (CDM) programs to upgrade facilities and equipment. Greening public sector buildings and operations is a key priority enlaced by Regulation 397 under the Green Energy and Green Economy Act (2009). The regulation directs municipalities to:

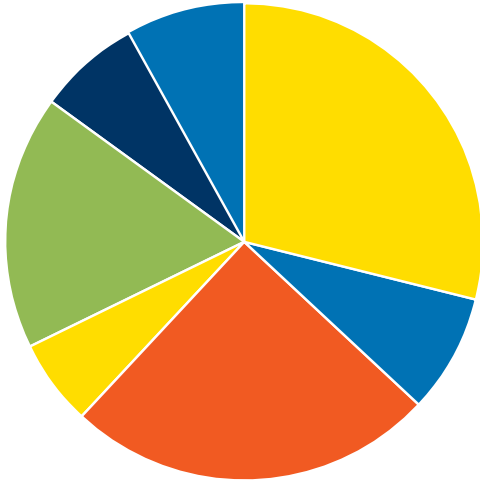
- Report energy consumption and greenhouse gas emissions (GHG) annually as of 2013.
- Submit 5 year conservation and demand management plans (CDM), monitor progress and update the plans in 2019.

The City of Kawartha Lakes Corporate Energy Management Plan provides a roadmap for demand management of the following energy resources:

- Hydro.
- Natural Gas.
- Propane for heating facilities and powering ice resurfacing machines.
- Fuel oil for heating.
- Vehicle fuel including Clear Diesel, Coloured Diesel and Unleaded Gas.

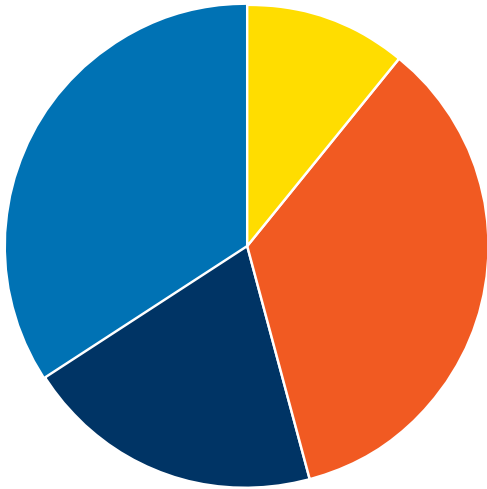
Baseline Energy Consumption 2015 by Type

Energy



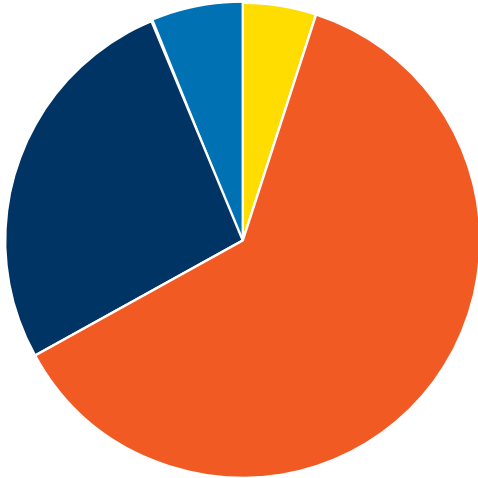
- Fire halls, depots, EMS and police – 7%
- Admin buildings and libraries – 8%
- Water and wastewater facilities – 29%
- Streetlights – 8%
- Recreation facilities – 29%
- Landfills – 6%
- Housing – 17%

Natural gas



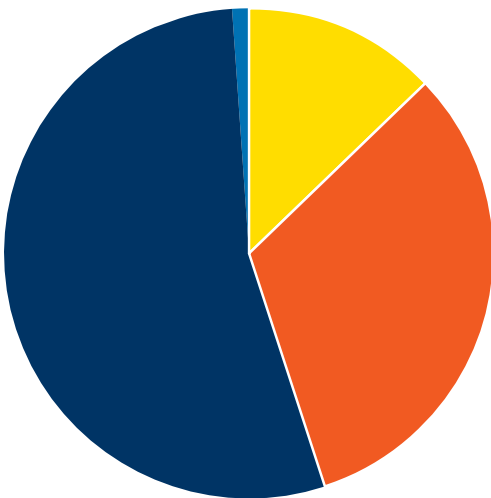
- Water and wastewater facilities – 11%
- Recreation facilities – 29%
- Fire halls, depots, EMS and police – 20%
- Admin buildings and libraries – 34%

Heating oil



- Admin buildings and libraries – 6%
- Recreation facilities – 62%
- Fire halls, depots, EMS and police – 27%
- Water and wastewater facilities – 5%

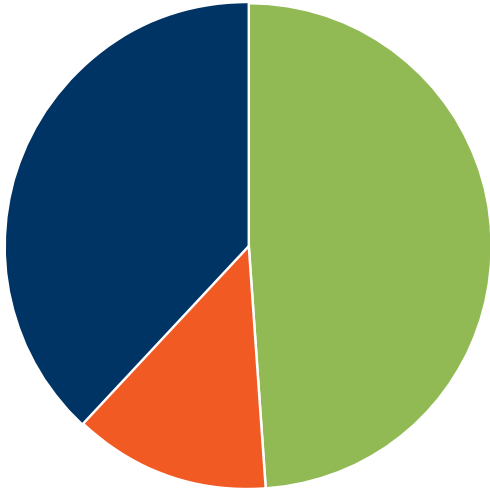
Propane



- Admin buildings and libraries – 1%
- Water and wastewater facilities – 13%

- Recreation facilities – 32%
- Fire halls, depots, EMS and police – 54%

Vehicle fuel (in litres)



- Clear diesel – 720,978.1
- Red diesel – 192,455.9
- Unleaded gas – 560,742.26

The City of Kawartha Lakes first Corporate Energy Management Plan (CEMP) is established in 2016 and will be reviewed and updated in 2021. The CEMP is designed to assist the City in reaching its corporate consumption reduction target. The plan provides consumption data and demand management plans for **8 categories of assets owned by the Municipality**:

1. Administrative Buildings and Libraries
2. Water and Wastewater Treatment Facilities
3. Street Light and Traffic Lighting
4. Recreation Facilities
5. Human Safety Facilities: Fire, Police, EMS, Public Works Depots
6. Fleet
7. Environmental Services and Solid Waste
8. Human Services - Housing

Objectives and targets

Energy conservation and demand management is an opportunity to:

- Reduce costs and greenhouse gas emissions (GHG).
- Better inform the budget process.
- Make our environment healthier.
- Engage staff in a common goal.
- Lower risk exposure.
- Demonstrate leadership by the City.

The objectives of the corporate energy management plan are to achieve the following:

- Promote efficient management of energy in all facilities and in fleet utilization.

- Incorporate efficient use of energy as a consideration in all corporate policy, budget and purchasing decisions.
- Integrate energy conservation as a part of the corporate culture.
- Build capacity and knowledge relating to energy systems, costs, opportunities, behaviour, and supply chain management.

Energy reduction through demand management

Quantitative targets will guide the city's efforts on energy management:

- Energy intensity – reduce by 10%
- Greenhouse gas emissions – 80% by 2050

Corporate programs

Energy stewards team

In 2016, the Chief Administrative Officer took a stand as the Energy Champion for the City and the Energy Stewards core team was formed with representation from the Community Services and Development Services Departments. The team is facilitated by the Office of Strategy Management. The role of the Energy Stewards team is to champion the CEMP and to act as an advisor and resource to the OSM.

Hydro conservation champions

In 2015 the Hydro Conservation Champions Project was launched by the Office of Strategy Management. As of 2016, there were 62 Hydro Conservation Champions trained to monitor consumption and initiate behaviour changes to reduce consumption in facilities across the city. Quarterly results reside as a key performance indicator on the corporate scorecard. Savings of \$116,000 are realized and consumption in the top 20 energy consuming facilities exceeds the target reduction of 10%.

Energy supply chain management

Supply chain management (SCM) is the oversight of materials, information, and finances as they move in a process from supplier to the City. Consumption data, supplier information, cost and programming around energy conservation and demand management is now housed in one central repository. A centralized repository of information allows for standardized processes to on board and retire energy accounts, share knowledge relating to energy use and to make decisions on corporate programming and asset management. SCM responsibility is shared by Finance, Building and Property and the Office of Strategy Management.

Local Authority Services (LAS)

Part of the AMO family, LAS is a preferred provider of competitively-priced and sustainable business services for Ontario municipalities and the broader public sector. LAS helps its customers “save money, make money, and build capacity.” Criteria based decisions are made to include energy accounts in bulk purchasing programs in an effort to reduce and stabilize costs. In turn, staff are better able to inform the budget process.

The City has had an agreement in place with LAS since 2009. In 2015 staff re engaged toward a more collaborative relationship with LAS. Staff in OSM work closely with LAS representatives in the following programs:

- Electricity and Natural Gas procurement for all accounts.
- Consolidated energy billing for street lights.
- Capital project – Lindsay Street Light Replacement 2017.
- Staff training and development.
- Consumption and billing analysis.

Corporate Communications

As a component of the Corporate Communications Strategy, both internal and external tools will be used to raise awareness on energy conservation and corporate energy initiatives on a scheduled basis. The goal is to make energy conservation a key pillar in our corporate culture.

A cascading balanced scorecard will be introduced in 2017. Leading KPI's for Hydro Champions will inform lagging corporate consumption KPI's for quarterly reporting. Graphic displays of consumption will be updated in facilities and communicated using tools identified in the corporate communications program.

Corporate commitment and staff engagement

The City's first Corporate Energy Management Plan was introduced in 2016.

A staff member in the Office of Strategy Management was assigned stewardship of Corporate Energy. A team is formed to support and champion the Corporate Energy Management Plan.

Demand management initiatives

Administrative buildings and libraries

Administrative buildings include City Hall, office space to house Engineering staff, Community Services Administration, Records and Archives, 5 Service Centres and 19 Libraries.

Priority actions and demand management:

Hydro Conservation Champions receive specialized training and are assigned to all administrative buildings and libraries to monitor hydro consumption and address any issues. Consumption results are posted in facilities for staff and the public to see in an effort to have everyone own the process of conserving energy.

Building retrofit work is planned for 2016 and includes an upgrade to HVAC systems. The Core Service Review process reduced the number of Service Centres in 2016 from 6 to 4 and reduced the number of Libraries from 21 to 19. Core Service Review work is exploring the possibility to consolidate administrative staff by implementing corporate standards around office space relating to size for each employee by position.

Administrative space will be incorporated in a newly constructed green build Housing facility in an effort to reduce our administrative footprint and energy consumption.

Water and wastewater treatment facilities

Priority action items and demand management plans:

Working in concert with service provider and partner Ontario Clean Water Agency, consumption of hydro is monitored by plant and by process. Annual energy targets are set for each facility within the service agreement. Compliance to targets is managed by trained operators on site at each plant who adhere to standard operating procedures in place to manage energy demand for each process. By reducing the use of pumps to handle flow, and increasing the use of bubble aeration systems, hydro consumption is reduced. Lagoon systems are in place to reduce the use of digesters that require hydro to operate.

Street light and traffic lighting

At the end of 2015 the City's streetlight and traffic lighting consisted of 3132 lights

located in the urban communities of Lindsay, Bobcaygeon, Fenelon Falls.

Priority actions and demand management:

In 2015 the City partnered with Honeywell to replace all of the high pressure sodium street lights in Bobcaygeon and Fenelon Falls with new LED lights.

Partnering with Local Authority Service, a street light retrofit is planned for the Lindsay urban centre. A total of 2514 high pressure sodium street lights will be replaced with LED street lights.

Streetlights consumed 2,245,304 KWh of hydro in 2015, contributing 8% to the corporation's hydro consumption.

Recreation facilities

Recreation facilities encompass arenas, community halls, trails, sports fields and 2 pools. At the end of 2015 the City owns and operates the following:

- 11 Ice pads
- Community centres
- 100 kilometers of maintained trails

Priority actions and demand management

Hydro Conservation Champions receive specialized training and are assigned to all recreation facilities to monitor hydro consumption and address any issues. Consumption results are posted in facilities for staff and the public to see in an effort to have everyone own the process of conserving energy.

In 2015 Honeywell retrofits to arena lighting and some plant systems were implemented. Specialized training was provided to staff in the operations of the new equipment to ensure guaranteed savings are achieved each year.

Human safety facilities: fire, police, EMS, Public Works depots

The City operates 21 Fire Halls, 9 Public Works Depots and 3 Paramedic Standalone Posts.

Priority actions and demand management:

Building retrofit work has been completed in the Police Services.

Building yielding considerable reduction in energy consumption. As a component of the Honeywell lighting retrofit project, Fire Halls in northern communities received upgrades to lighting systems. Public Works Depots in some areas have removed old lighting and replaced with LED lighting as incentives become available and budgets allow.

Fleet

Priority actions and demand management:

The City's fleet consists of 352 pieces of rolling equipment and vehicles. Included in the inventory are various types of graders, tractors, pick ups, cars, heavy trucks, ice re surfacing machines, buses, compactors, generators, steamers, water tanks. Vehicles and equipment are assigned to staff in various departments. Policies, Management Directives and Standard Operating Procedure's provide direction to staff to ensure that vehicles and equipment are properly operated and maintained to achieve optimal life cycle.

- Bulk fuel purchasing program assists with managing supply chain and cost.
- Anti Idling policy supports GHG reductions.
- Preventative Maintenance Management Directives and Standard Operating Procedures ensure that equipment is maintained regularly.
- New staff complete driver training to ensure that everyone operating a city vehicle or piece of equipment understands how to use the equipment as designed and in compliance with the Highway Traffic Act.
- Vehicle Use Standard Operating Procedure provides instruction to operate equipment efficiently while managing environmental factors.

Environmental services and solid waste

The City currently operates 5 Landfill Sites.

Priority actions and demand management

In 2015 the Lindsay Landfill Site began collecting methane, flaring and converting to electricity per the Ministry of Energy standards. Target production is 335 KWh per annum. This power is diverted for use at the nearby Wastewater Treatment Facility. The Somerville site is undergoing a power review in 2016 to increase efficiency and explore the use of solar power in place of hydro.

The City's Recycling Program provides public education on how and what to recycle in an effort to divert waste from landfill sites. A new clear bag program for curbside collection was introduced in 2016 and will be fully established in 2017. The target is to reduce volatile organics and household hazardous waste deposits in the Landfill, reduce fiber from paper and cardboard, and increase composting of materials.

A vendor selection criterion for procurement of waste removal services includes bonus points for reduction in GHG emissions.

Leaf and yard waste collection program allocates woodwaste to be used as part of landfill cover.

Human Services – housing

Priority actions and demand management:

Kawartha Lakes Haliburton Housing Corporation owns and operates the following:

- 732 housing units throughout the City and Haliburton County
 - 231 units are in Haliburton County
 - 501 units are in the City of Kawartha Lakes
- Annual recovery of Debt Retirement Charges for Hydro bills began in 2015.
- Hydro and Natural Gas consumption is tracked and monitored by building.
- Tenant education programs that encourage energy conservation are offered regularly.
- Preventative maintenance schedules are in place and are monitored for completion and compliance on a regular basis.

Looking to the future

In an effort to meet reduction targets, several initiatives will need to be put in place. The following recommendations will support the City's achievement of its reduction target:

Organizational commitment

Staff, and knowledge resources needed to enable energy management, supply chain management. Staff time and dedication is required. While energy is a corporate program, all staff need to have a stake in the success of the set reduction targets.

Energy expertise is required in the organization to achieve targets and sustain gains. On boarding or training a Certified Energy Manager in 2017 is recommended.

City joins Federation of Canadian Municipalities (FCM) - Partners for Climate Protection Program (PCP)

The Partners for Climate Protection (PCP) program is a network of Canadian municipal governments that have committed to reducing greenhouse gases (GHG) and to acting on climate change. Since the program's inception in 1994, over 300 municipalities have joined PCP, making a public commitment to reduce emissions. PCP membership covers all provinces and territories and accounts for more than 65 per cent of the Canadian population.

PCP is the Canadian component of ICLEI - Local Governments for Sustainability Cities for Climate Protection (CCP) network, which involves more than 1,500 communities worldwide.

The program empowers municipalities to take action against climate change through a five-milestone process that guides members in creating GHG inventories, setting realistic and achievable GHG reduction targets, developing local action plans, and implementing plans using specific, measurable actions to reduce emissions.

Actions	Complete
Join partners for climate protection and appoint a Council champion and staff	June 2016

Actions	Complete
champion	
Create a greenhouse gas emissions inventory in the community	2017
Set a reduction target to reduce greenhouse gas emissions	2017
Create a local action plan with actions to reduce greenhouse gas emissions	2018
Implement the local action plan	2018 onward
Monitor progress in implementing the plan and report results	On-going

Financial commitment

By quantifying financial savings and setting funds aside to re invest in energy reduction initiatives. Consider an “Energy Reserve Fund”.

Buildings and equipment

Monitoring and capacity building in the area of energy consumption – raising awareness with staff and with visiting stakeholders to encourage all to own the process.

Asset procurement

Criteria to purchase assets should include measures of efficiency, procurement, and impact on corporate targets.

Recommendation: Review Purchasing Policy and add criteria to vendor selection process to encourage and reward green practices by suppliers.

Communication

Encourage engagement and behavioural changes with all staff through effective information and knowledge sharing.

Recommendation: Develop a schedule of communication using corporate tools to keep energy conservation top of mind. Adopt, commit and lead in the creation of a 'conservation culture'. Energy Stewards Team in concert with Communications Advertising and Marketing.

Workplan and project planning

Expand the Energy Stewards Team to include staff making day to day decisions on energy. The team's workplan would include the development of a decision making matrix for energy related initiatives and projects. Projects and financial review would take place at this working group forum. A corporate lense would be used to choose, finance, communicate and execute demand management and energy reducing initiatives. A key deliverable is a Corporate Energy Policy. The policy would lay out a road map for energy management in keeping with Provincial and Federal mandates. The following components would formulate the policy, management directives and standard operating procedures:

- **People** – engagement, communication, knowledge development, opportunity identification.
- **Asset Life Cycle** – develop template and criteria to include energy consumption and conservation as part of the decision to on board, use and retire assets. A schedule of building audits could be done over time to seek opportunities for improvement.
- **Partnerships** – continue to build partnerships, share information and opportunities for supply chain management, grant and funding opportunities, collaboration with other organizations, neighbouring communities, other levels of government, Agencies, Boards, educational institutions.
- **Data Management** – enhance corporate ability to have access to and use data to make decisions in support of the corporate target. Build corporate capacity and knowledge.

- **Financial** - construct a corporate financing plan relating to energy to quantify savings, fund projects and initiatives and track corporate results.

Energy related documents

- Agricultural Action Plan
- Parks Recreation and Culture Action Plan
- Integrated Community Sustainability Plan
- Trails Master Plan

Conclusion

The City of Kawartha Lakes is moving quickly in a positive direction to reduce energy consumption and Greenhouse Gas Emissions throughout municipal operations. By thinking globally and acting locally, current and future generations benefit.

“Climate change is happening, humans are causing it, and I think this is perhaps the most serious environmental issue facing us.” - Bill Nye, *The Science Guy*