CONSERVATION AND DEMAND MANAGEMENT PLAN

Haldimand War Memorial Hospital & Edgewater Gardens

2014

1 Executive Summary

The following Energy Conservation and Demand Management Plan is written for Haldimand War Memorial Hospital & Edgewater Gardens in accordance with sections 6 and 7 of the Green Energy Act, 2009, O. Reg.397/11. The utility consumption data analyzed in this report is from 2012.

Haldimand War Memorial Hospital is comprised of one 39-bed hospital located in Dunnville, Ontario. Attached to the hospital is Edgewater Gardens, a 64-bed long-term care facility. Haldimand War Memorial Hospital spans 113,440 square feet as a multi-story campus.

Haldimand War Memorial Hospital & Edgewater Gardens have an annual electricity consumption of 2,279,033 kWh, and annual natural gas consumption of 310,405 m^3.

Goals and Objectives

- We will undertake initiatives to reduce energy consumption at our facilities.
- We will also implement measures to reduce our greenhouse gas emissions, through either capturing our emissions before they are released into the atmosphere or through fuel switching.
- We will also work to educate our staff on environmentally sustainable culture.

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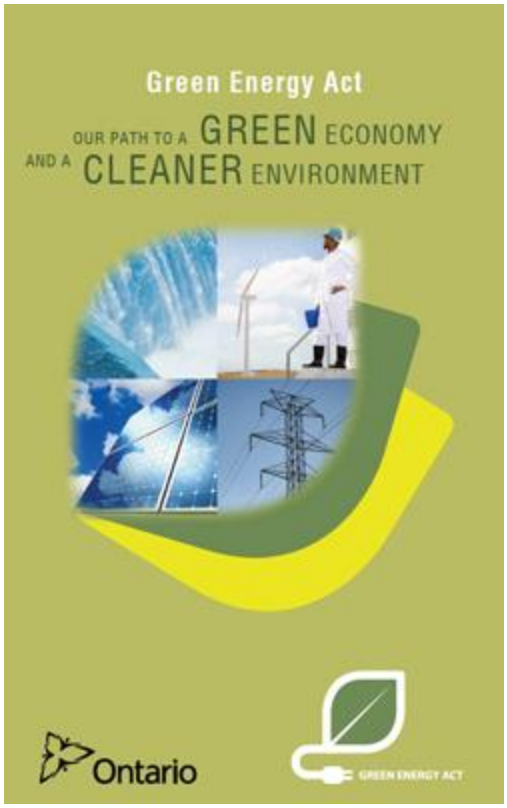
3 Ontario's Green Energy Act – Overview

Ontario's *Green Energy Act* (GEA) was created to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs.

3.1 Promoting Energy Conservation

Conserving energy not only saves money for families and businesses, but it also lowers demand on the electricity system and helps reduce greenhouse gas emissions.

Through conservation, Ontario homeowners, businesses and industry have saved more than 1,900 megawatts of peak demand electricity since 2005 – the equivalent of more than 600,000 homes being taken off the grid.



- The GEA continues to promote conservation by:
- *Making energy efficiency a key element of Ontario's building code*
- *Creating new energy efficiency standards for household appliances*
- *Working with local utilities to reach assigned conservation targets*
- *Protecting low-income Ontarians through targeted conservation programs*

VISION

To provide the best rural health care.

MISSION

Our excellence in health care delivery and service will be guided by:

- The involvement of patients, residents and their families in decisions about their care.
- A continuing search for new and better ways of serving our community.
- Evidence-based best practices.
- An approach that supports our organization's sustainability for future generations.
- A healthy work environment that inspires, energizes and embraces diversity.

VALUES

Compassion - We are known for exceptional caring and compassion.

Respect - We respect the dignity of every person under our care and with whom we work.

Honesty - We act with honesty, integrity and transparency.

Teamwork - We value the knowledge and opinions of every member of our team.

4 Introduction

The purpose of our Conservation and Demand Management Plan is to promote sustainable stewardship of our environmental and community resources. In keeping with our core values of **high quality patient care** and **financial responsibility**, our energy management program will aim to reduce operating costs while enabling us to provide excellent and compassionate service to a greater number of people in the community. The plan will also meet the requirements outlined in sections 6 and 7 of the Green Energy Act, 2009, O. Reg.397/11.

To obtain full value from energy management activities, and to strengthen our conservation initiatives, a strategic approach will be taken. Our organization will strive to fully integrate energy management into our practices by considering indoor environmental quality, operational efficiency, and sustainably sourced resources into financial decision-making.

5 Building Survey

Our campus serves the region of Haldimand County, Ontario. Haldimand War Memorial hospital provides full surgical services, many community outreach programs (Community Care Access Centre, Diabetic Clinic), and a 24-hour ER. Attached to the hospital is the Edgewater Gardens long term care. Edgewater Gardens is 45,078 sq.ft, and provides patients with 24-hour nursing and personal care, as well as access to doctors and other health professionals.

Facility Information	
Name	Haldimand War Memorial Hospital
Facility Services	Haldimand War Memorial provides chronic & acute care.
Address	206 John St., Dunnville, Ontario, N1A 2P7
Square Footage	113,440 sq.ft

6 Energy Use

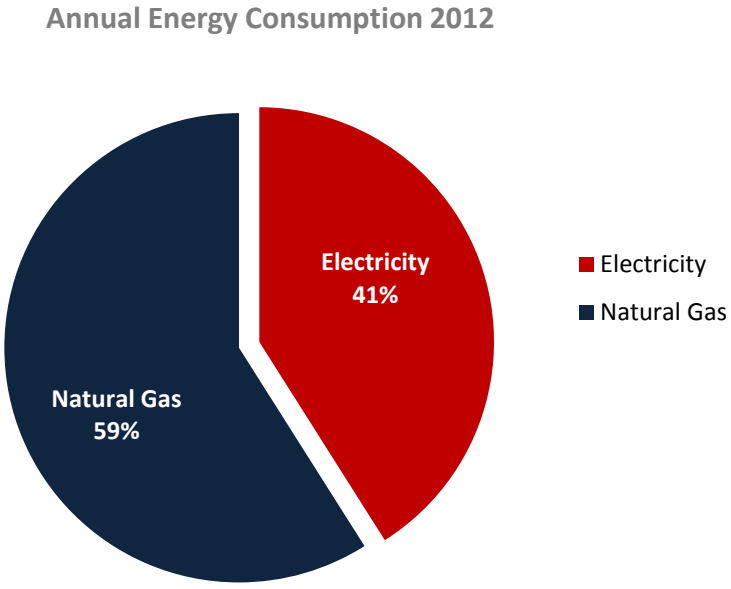
The following section outlines the energy breakdown of our facilities throughout a 365 day period. This section will examine electricity and natural gas consumption and compare this energy use to the average consumption of Ontario hospitals.

6.1 Energy Consumption Analysis

Current energy utilities supplied for the Haldimand War Memorial Hospital consists of natural gas and electricity. The following table outlines energy consumption for each facility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Table 6.1: Energy Consumption Summary for Haldimand War Memorial Hospital & Edgewater Gardens

Energy Source	Annual Consumption in Units	Annual Consumption (ekBtu)
Electricity (kWh)	2,279,032.85	6,769,557.63
Natural Gas (m^3)	310,405	11,181,092
Total Annual Energy Consumption:		**18,957,476.60**



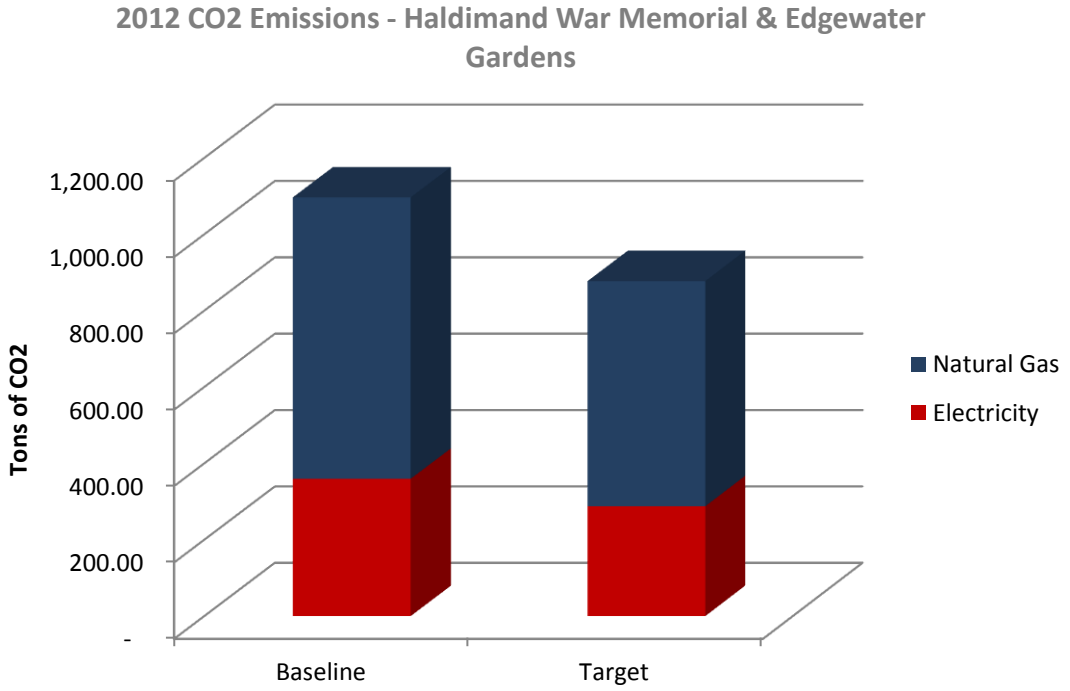
7 Greenhouse Gas Emissions

The greenhouse gas emissions are calculated based on the 2012 electricity and natural gas consumption data and are summarized in the following tables.

Table 7.1: Energy Related Greenhouse Gas Emissions the Campus

Energy Source	Units/Year	Tons of CO_2
Electricity (kWh)	1,983,961.5	359.49
Natural Gas (m^3)	342,497.11	736.91
Total CO_2 Emissions		**1,096.41**

The estimated target is based on a 10% reduction of our energy consumption. We will aim to achieve this goal as we explore the proposed energy efficient measures in the future.



8 Conservation & Demand Management Plan

Conservation & Demand Management requires adequate planning in order to produce long-term success. This section of the report outlines the following:

1. **Previously Implemented Conservation Strategies**
2. **Ongoing Conservation Strategies**
3. **Proposed Conservation Strategies**

8.1 Previously Implemented Conservation Strategies

Our campus is committed to encouraging the values of environmental stewardship and promoting positive health in our hospitals and in our communities. Energy saving initiatives that are currently being implemented, as well as the utilities affected by those initiatives are summarized in the following tables.

Table 8.5: Ongoing Energy Saving Initiatives

Measure	Cost	Annual Savings	Electricity Savings (kWh)	Natural Gas Savings (m^3)	Water Savings (m^3)
HVAC Scheduling and Setback	$0	$1,046.00	8,881	615	-
Installation of Low-Flow Faucet Aerators/Restrictors 50%	$5,960.00	$5,860.00	-	7,071	1,596
Installation of Vending Machine Energy Miser, and shifting location of machine	$250.00	$168.00	1,875	-	-
Energy and Resource Awareness	$25,000	$11,438	66,015	9,690	853

8.2 Proposed Conservation Measures

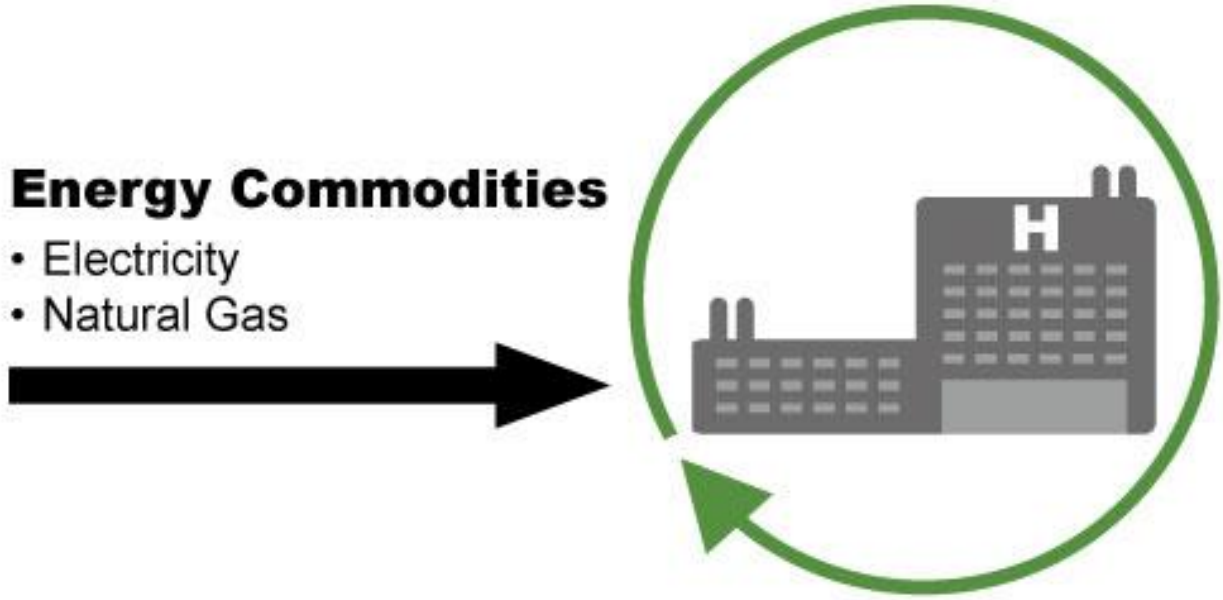
The following tables summarize the conservation strategies that our organization is interested in exploring, and outlines which related utility costs would be avoided. In August 2014, we will be further exploring an ESCO project that will include these measures. This project will help our facility manage our financial and energy conservation plans for the future.

Table 8.7: Summary of Proposed Conservation Measures

Measure	Cost	Annual Savings	Electricity Savings (kWh)	Natural Gas Savings (m^3)	Water Savings (m^3)
Installation of Energy Efficient Lighting	$23,463.00	$5,912.00	62,050	-	-
Upgrade All Motors to Premium Efficiency	$10,375.00	$1,186.00	12,319	-	-
Convert Refrigeration Units to Air-Cooled	$13,500.00	$3,606.00	-	-	1,898
Steam Trap Audit and Replacement	$3,000.00	$1,140.00	-	2,849	
Installation of Linkageless Controls for Large Burners	$11,000.00	$1,616.00	-	4,041	-
Installation of Removable Insulation and Insulation Upgrades	$39,760.00	$10,680.00	-	26,702	-
Upgrade Flat V-Bets to Cogged	$1,280.00	$814.00	9,045	-	-

8.3 Energy Commodities Management

Energy management refers to how energy is both purchased and used for building operations. An important aspect of energy management is putting in place an adaptable energy commodities procurement strategy to be able to adjust to fluctuating commodity prices. We currently work with Blackstone Energy Management Services Inc. to assist us in our energy commodities procurement. Working with Blackstone allows us to meet or reduce our energy commodity budgets. This process ensures that resources can be properly allocated to energy and water saving programs.



9 Closing Comments

Thank-you to all who contributed to Haldimand War Memorial Hospital & Edgewater Garden's Conservation and Demand Management Plan. We consider our facility a primary source of care, and an integral part of the local community. The key to this relationship is being able to use our facilities efficiently and effectively to maximize our ability to provide the highest quality of healthcare services while integrating environmental stewardship into all aspects of facility operations.

On behalf of the senior management team here at Haldimand War Memorial Hospital & Edgewater Gardens, we approve this Conservation & Demand Management Plan.

Tim Baker

Director, Engineering & Maintenance

Haldimand War Memorial Hospital and Edgewater Gardens

This report was prepared through collaboration between the Haldimand War Memorial Hospital facilities management, and the Blackstone Energy team.