

Ontario Regulation 397/11 – Energy Conservation and Demand Management Plans Southlake Regional Health Centre

Overview

This report provides a brief background and summary of the requirements relating to Ontario Regulation 397/11 – Energy Conservation and Demand Management Plans. Also, this report includes the results from the completion of the Ministry of Energy’s (MOE) 2013 Energy Consumption and GHG Emissions template as well as other relevant energy information for all of the facilities operated by the Southlake Regional Health Centre.

Background

On January 1st, 2012 the Energy Conservation and Demand Management Plans Regulation (O.Reg. 397/11) came into effect. In 2013, public agencies are required to prepare and publish a summary of their 2011 energy consumption and greenhouse gas emissions. The regulation requires public agencies to report their energy usage and Greenhouse Gas (GHG) emissions on an annual basis and also develop a Five Year Energy Conservation and Demand Management (CDM) Plan by July 1, 2014. The requirements include;

By July 1, 2013 public agencies are required to submit:

- Energy Consumption and GHG Emissions template using 2011 data

By July 1, 2014 public agencies are required to submit:

- A Five Year Energy Conservation and Demand Management (CDM) Plan
- Detailed costs and estimated savings for all proposed Energy Conservation Measures
- Updated energy consumption and GHG Emissions
- Benchmark facilities
- Updated building characteristics
- Option to report on previous energy conservation initiatives

In summary, an updated version of the Energy Consumption and GHG Emissions template must be submitted every year, on or before July 1st, starting 2014. Completed CDM Plans are due July 1, 2014 and every five years thereafter.

Discussion

A first step in developing a CDM Plan is to establish baselines. As required by regulation 397/11, the initial baseline consists of 2011 energy consumption and GHG emissions information. Table 1 below provides a Corporate Description of the facilities that are included in the Energy Consumption and GHG Emissions template that was completed for the Ministry of Energy. Table 2 below contains a summary of Southlake Regional Health Centre's energy consumption for January 2011 to December 2011. The table is broken down by facility for Southlake Regional Health Centre and is further subdivided by type of operational use (Administrative use or Hospital use). The table outlines the electricity as well as natural gas consumption for each site and the total consumption for the organization. It also breaks down the GHG emissions for each site as well as the energy intensity with the average intensity across all sites. Using energy intensity as a variable will assist in the identification of opportunities for future energy efficiency and conservation initiatives.

Table 1: Corporate Sites

Building Name	Operation Type	Address	City	Postal Code	Total Floor Area (m ³)	Average Hours per week
Southlake Regional Health Centre	Administrative Offices and Related Facilities	596 Davis Drive	Newmarket	L3Y 2P9	9,873	50
Southlake Regional Health Centre	Facilities Used for Hospital Purposes	596 Davis Drive	Newmarket	L3Y 2P9	39,492	168
Stronach Regional Cancer Centre	Administrative Offices and Related Facilities	596 Davis Drive	Newmarket	L3Y 2P9	1,309	50
Stronach Regional Cancer Centre	Facilities Used for Hospital Purposes	596 Davis Drive	Newmarket	L3Y 2P9	3,927	50

Table 2: Energy Consumption Summary

Site	Total Electricity Consumption (kWh)	Total Natural Gas Consumption (m ³)	GHG Emissions (kg)	Energy Intensity (GJ/m ²)
Southlake Regional Health Centre - Admin	3,932,676.59	703,113.80	1,643,940.06	4.16
Southlake Regional Health Centre - Hospital	15,730,706.36	2,812,455.20	6,575,760.25	4.16
Stronach Regional Cancer Centre - Admin	521,409.26	143,697.50	313,391.11	5.63
Stronach Regional Cancer Centre - Hospital	1,564,227.79	431,092.50	940,173.34	5.63
				Average Intensity
Total	21,749,020.00	4,090,359.00	9,473,264.77	4.90

Energy Intensity Definition - a measure of energy efficiency measured by the amount of energy consumed in GJ per square metre of floor space.

Figures 1 and 2 below illustrate the breakdown of electricity and natural gas consumption by facility and operation. From these graphs it can be seen that Southlake Regional Health Centre (both administration offices and hospital) account for the majority of the electricity usage. For natural gas, the Southlake Regional Health Centre also accounts for the largest portion of the natural gas usage.

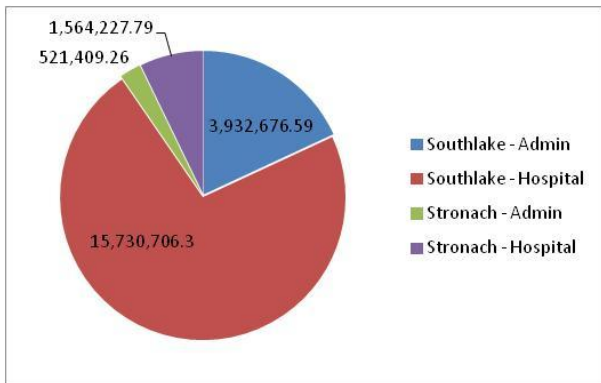


Figure 1: 2011 Electricity Consumption (kWh)

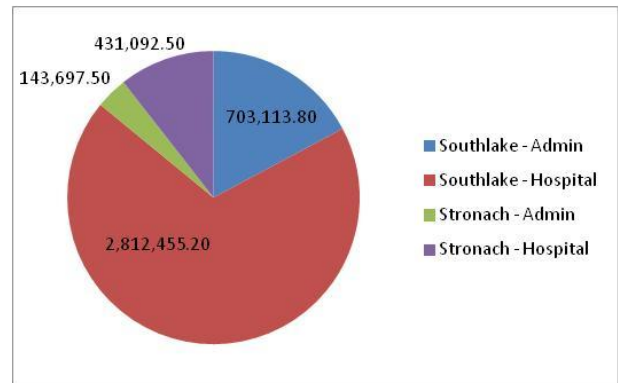


Figure 2: 2011 Natural Gas Consumption (m³)

Figures 3 and 4 below illustrate the 2011 aggregate consumption for all sites for electricity and natural gas respectively. Both commodities show a seasonal trend in consumption. For electricity, the peak usage occurs during the cooling season during the summer months from the usage of air conditioning and natural gas usage is highest in the heating season during the winter months.

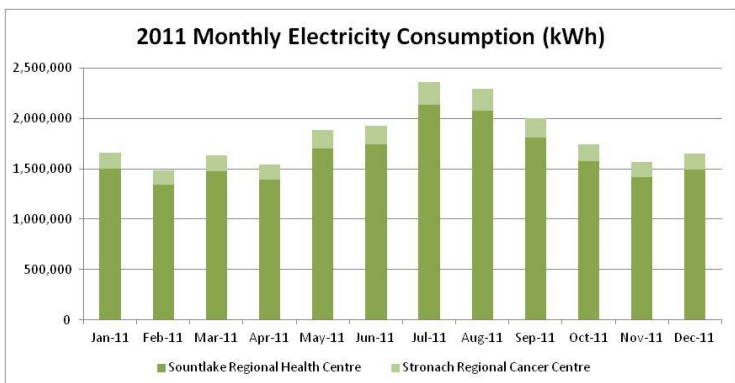


Figure 3: 2011 Electricity Usage by Month

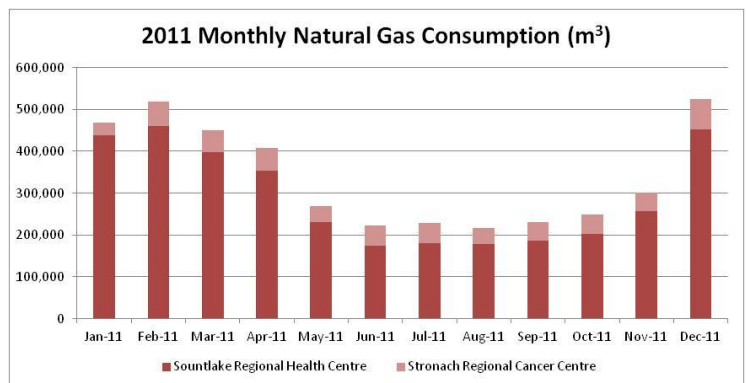


Figure 4: 2011 Natural Gas Usage by Month

Figure 5 below illustrates the GHG emissions for all sites and identifies the Southlake Regional Health Centre operations as the largest producer of GHG, primarily due to the large square footage and high operating hours of the site.

Figure 6 below illustrates that all sites have similar energy intensities. Energy intensity is less a function of the size of the building and more a function of the efficiency of energy consumption.

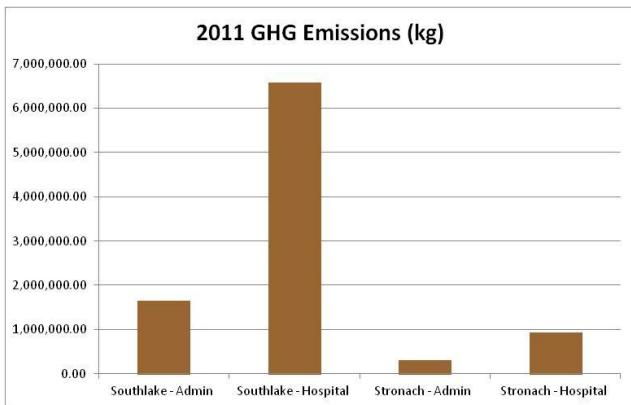


Figure 5: 2011 GHG Emissions

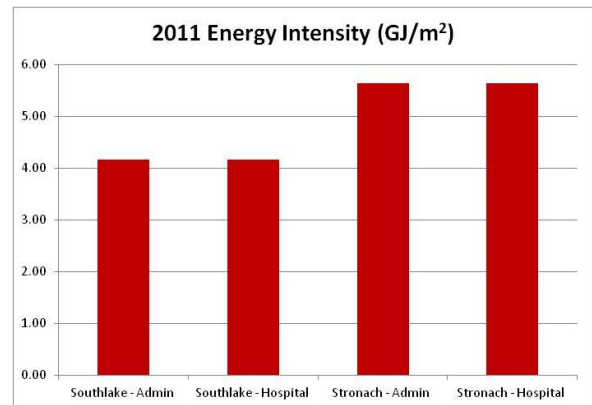


Figure 6: 2011 Energy Intensity

Summary

All of the completed work outlined above and the subsequent submission of Southlake's 2013 Energy Consumption and GHG Emissions template ensures that Southlake is in compliance with Regulation 397/11 and also helps position our organization to complete the 2014 CDM plan. The CDM plan will be a fundamental component of Southlake's overall energy management strategy moving forward.