

BACKGROUND INFORMATION

Effective Dates: July 01, 2014 – June 30, 2019

Properties Included:

1. South Huron Hospital Association (SHHA) – 24 Huron Street West, Exeter ON, N0M 1S2
2. South Huron Hospital Medical Clinic – 23 Huron Street West, Exeter ON, N0M 1S2

Floor Space of Properties:

1. ~ 34,500 ft²
2. ~ 4,376 ft²

Current State Energy Consumption from 2011 Data:

5,495 GJ of energy was consumed in 2011 comprised of 2,681 GJ (744,778 kWh) of electricity and 2,814 GJ (73,546 m³) of natural gas for a 49/51 split between electricity and natural gas for heating/lighting.

The energy intensity of our facility (a measure of energy consumption in GJ/m² of floor space) for 2011 was 1.52; in keeping with approximately 60% of the average of our peer group as well as all provincial hospitals.

From this collective information, we were awarded “Bronze Rating” for 2011 as part of the Green Hospital Scorecard. We fall within the majority (75%) of the 110 reporting hospitals in achieving this rating. This is an acceptable starting point, however our aim is to improve upon this moving forward in a step wise fashion.

Energy Conservation and Demand Management Plan:

As part of Ontario regulation 397/11 (Green Energy Act), all public facilities are mandated to submit annual energy consumption data. In addition, at the start of year two of the Act, facilities are mandated to develop a five year energy conservation and demand management plan which is to be readily available to the public in hard copy as well as electronically on the Hospital website. Moving forward, facilities are mandated to develop new plans on a rolling five year basis.

Key ingredients of the plan must include:

1. Current state for the most recent year that full data is available for (see above).
2. SHHA’s goals and objectives for conserving energy over the next 5 years.
3. SHHA’s proposed measures to realize the goals and objectives outlined in 2) as well as the projected costs savings associated with these measures.
4. Any renewable energy generated if appropriate
5. Confirmation that the plan has been approved by SHHA’s Senior Management Team.

PLAN DETAILS

Goals and Objectives:

The goal of SHHA as a facility is to alter the manner in which the facility is heated as the corner-stone of the five year energy conservation plan. Simultaneously, we aim to rethink the current electricity needs of the facility. The ultimate goal of these processes is to become a more energy efficient facility as well as to have a positive impact on the greenhouse gas emissions generated through our facility's energy usage. As part of this initiative, we also aim to realize cost savings that can be channeled elsewhere in the facility to ensure that we are able to continue to offer quality Patient care close to home.

Through this process, we aim to realize $\geq 15\%$ savings per year on our current energy costs (2011 energy costs of ~ \$130,000) for a total savings of \$97,500. These quotes are based on 2011 natural gas and electricity costs which have and may continue to increase(d) during the duration of the plan. However, if all were to remain stable, this savings would represent 75% of a calendar year costs or 9 months of energy savings over a five year period. Factored out over the 5 year period this represents nearly 2 months of each calendar year where energy costs would be negated.

Implementation Plan:

The projected savings are anticipated to be somewhat "back loaded" due to the timing of implementation of the plans during the five year period.

Phase 1 of the plan is to introduce a staff engagement electricity savings program by tapping into the existing "Chester" initiative developed by the London Health Sciences Centre.

This education package engages staff through various endeavours including a signage awareness campaign to "turn off the lights" upon exiting an empty room. Key to this initiative is a culture change in Staff by educating them on cost savings that can be realized in their own residence and through this process, that culture change will be adopted in the workplace as well. Recognition of achievements through a reward system is also built into the program.

We have identified a Staff Champion from the Administration Department for this initiative who interacts daily with all Staff in the facility. Our aim is to roll out the Chester energy conservation initiative beginning September 2014.

Phase 2 of the plan concentrates on a retrofit of our current heating system. The current boiler for the Hospital is 30+ years of age and estimated to be functioning at approximately 30% efficiency.

The original aim was to retrofit this aged unit with a modern high efficiency boiler system. However, during initial investigations into sourcing replacement units, it was identified that boiler systems are marketed that double as generators through steam turbine technology. Briefly, the boiler produces steam that drives a turbine to generate electricity for the facility. Steam is then condensed to hot water to run the existing heating system of the facility. This twin benefits of heat and electricity should meet the needs of both the Hospital and the Medical Clinic as well as potentially eliminating the need for a

separate generator for emergency needs during power failures. In addition steam may also be harnessed to drive our in house sterilization processes.

At the same time as the boiler technology is upgraded, the Hospital heating system will be retrofitted with thermostatic radiator valves to allow for individual room temperature control unlike the current state where all rooms fed by one loop of the system are heated equally.

This phase of the plan is to be rolled out by the start of the heating season for the winter of 2014/2015. As a result, despite a much more energy efficient system being installed, the savings will not be realized until later in the five year cycle of the plan. However, considering that the aim is to generate our own electricity which currently is the vast majority of the energy costs of the facility, the cost savings should be very dramatic on a day by day basis once the new system goes live.

Miscellaneous:

Given our role as a hospital; Patient and Staff safety is vital. Therefore, initiatives that target lighting in the high Patient traffic areas of the facility must be limited to eliminating lighting in non-occupied rooms. However, in other areas of the facility (e.g. offices, low Patient traffic corridors etc.) lighting requirements could be permanently decreased through disconnecting power to every second ceiling light panel. Alternatively, adopting a proactive approach of ensuring that all light units contain only a single bulb each would achieve the same aim. Through this process, the electricity generated in Phase 2 from the natural gas fired boiler/generator will be more effectively utilized to ensure that direct Patient care is the primary end point of the energy consumption.

Renewable Energy:

Although the plan as outlined above does not strictly conform to the definition of “renewable energy” (e.g. Solar, wind etc.) the fact that our plan centers around a system whereby both electricity and heating is generated from a single energy source (natural gas), we feel that the plan at least partially addresses the core values of renewable energy (decreasing the requirement for carbon and fossil fuels for power and heat). Essentially, our requirement for electricity from the grid will be significantly decreased if not essentially eliminated regardless of how the power is generated. In this case, electricity will be generated through a steam driven turbine as a by-product of heating our facility. In keeping with this theme, we may also be able to harness this steam to use as part of our autoclaving process when sterilizing surgical instruments etc.

Senior Management Team Approval of Plan:

As indicated by signature below, the plan has been approved by the Senior Management Team of the South Huron Hospital Association.

Heather Klopp Interim CEO