South Huron Hospital Association Five Year Energy Conservation and Management Plan

BACKGROUND INFORMATION

Effective Dates: July 01, 2014 – June 30, 2019 – Updated June 2017

Properties Included:

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

Floor Space of Properties:

(1) ~ 34, 500 ft^2
(2) ~ 4,376 ft^2

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, SHHA's Energy Management Plan is intended to promote stewardship of our environment and community resources. The SHHA organization is committed to planning for future initiatives that utilize environmentally responsible planning and decision making to increase energy efficiency and reduce energy waste and costs. Energy is an integral part of SHHA's operations, financial sustainability, and Environmental stewardship. As a leader in moving our community forward toward greater overall health, it is critical to our mission that our facilities model an efficient, effective environment of care. To this end, SHHA resolves to pursue the guiding principles of strategic energy management. In our Energy Management Plan, we define our direction towards Energy management and sustainability. This plan will directly support SHHA's mission and play a key role in ensuring that our operations are a model of efficiency and progressive improvement.

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 m^3) of natural gas for a 49/51 split between electricity and natural gas for heating/lighting.
In the ensuing 4 years the energy consumption for both electricity and natural gas within +/- 15% of the above figures and hence the relatively modest consumption of SHHA is stable. Having said that, the past three years indicate a modest but consistent decrease in utilization

The energy intensity of our facility (a measure of energy consumption in GJ/m^2 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.

No significant changes have occurred during the ensuing time frame for a variety of reasons including value for money return on our investments given the capacity for meaningful savings in energy savings upgrades, changes in the process and scope of infrastructure fund procurement etc.

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.

Guiding Principles:

<u>Supporting Mission-Critical Goals</u>:
Strategic energy management will directly support SHHA'S mission- critical goals of caring for the environment and the community. It will also help the Hospital to optimize the healing and working environment; improve the hospital's financial bottom line by reducing unnecessary energy and utility costs; and optimize the capacity of existing energy systems to meet current and expanding operational needs. The impacts of SHHA's energy management efforts on those goals will be tracked and reported wherever possible.

Business Case:
Below are the central business arguments for SHHA's pursuit of strategic energy management.

- Strengthened Community Leadership and Environmental Stewardship Energy management is a visible, public commitment to the community and environment. Through aggressive energy management, SHHA can provide leadership in promoting sustainable communities, efficient business practices, and environmental stewardship.

- This is an excellent opportunity to provide leadership and reduce costs at the same time. Enhanced healing and working environment in existing facilities, efficient operating practices, improve patient care as well as employee comfort with more stable air temperature, better indoor air quality, and lighting. By way of an example, recent research has found that daylight eases surgical pain and contributes to substantial savings in pharmaceutical costs. Improved Financial Health and Operating Cost Reduction Strategic energy management presents a highly leveraged opportunity to reduce operating costs and positively impact SHHA's bottom line.
- Dollars of operating cost savings directly improve the operating margin. Further, investments in energy projects typically have a lower risk of performance over time relative to other investments and savings from energy projects are easier to forecast reliably than savings or revenue increases expected from more variable types of investment. Optimization of Capacity to meet operational needs and energy efficiency optimizes overall equipment/system operation so that system capacity can be reclaimed for current and expanding operational needs. This "free capacity" can eliminate the need to add major new infrastructure and is far less expensive.

PLAN DETAILS

Goals and Objectives:

Given the documented modest energy consumption over several years and limited scope for significant savings on a return of significant capital investment for large scale system replacements SHHA are now considering a different strategy. Savings can be obtained in gas and electricity costs by:

- Retrofitting the aged and poorly design distribution system of the hot water heating and HVAC conditioning systems and associated controls for the same
- Retrofitting the distribution system for the hot and cold domestic water systems
- Upgrade the aged electrical switchgear and distribution grid as it has been at maximum capacity for several years limiting the ability for new installations as would be required to rework the hot water heat and HVAC systems as outlined above
- Upgrade rooftop HVAC (RTU) units due to age and condition with new more energy efficient units; possibly incorporating gas burner capability as a source of winter make-up heat
- Install more energy efficient LED lighting during normal cycles of maintenance upgrades and/or during small project renovations
- Reduce water consumption with more energy efficient (low flow) fixtures during normal cycles of maintenance upgrades

Implementation Plan:

With the new implementation strategy we still anticipate a phased in approach due to the sheer magnitude of the larger projects and/or the replacement cycle of smaller equipment, however each stage will be designed such that it is prioritized as phase 1 when direct Patient care is positively impacted (eg. Clinical areas of the facility prior to non-clinical areas). It is understood that this plan is reliant upon securing suitable funding through a combination of both the Hospital Infrastructure Renewal Funding Scheme as well as grants available for retrofits/upgrades of this type. For smaller projects where end of life cycle replacement is concerned, this will proceed on an ongoing basis with the expectation that net energy efficiency is one of the driving forces at all times.

Energy Efficient Upgrades:

To date SHHA have engaged in a small number of projects of limited scope where energy savings are concerned including:

- Introduction of low flow automatic taps at many sinks throughout the facility decreasing the utilization of both hot and cold water
- Retrofit of hot water storage tanks as end of life units were less energy efficient, and designed with volume capacities no longer required for our decreased needs as outlined above
- Replacement of end of life hot water heater/tanks with energy efficient units
- Replacement of end of life halogen exterior lighting with energy efficient LED units

Senior Management Team Approval of Plan:

This plan was developed and authored by Bill Brintnell; SHHA Director of Diagnostics and Operations with the assistance of several individuals. As indicated by signature below, the plan has been approved by the Senior Management Team of the South Huron Hospital Association.

Todd Stepanuik
President & CEO
South Huron Hospital Association