2019-2024

LISTOWEL WINGHAM HOSPITALS ALLIANCE ENERGY CONSERVATION AND DEMAND MANAGEMENT (CDM) PLAN

Listowel Memorial Hospital (LMH)

Wingham and District Hospital (WDH)

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Introduction

The purpose of Listowel Wingham Hospitals Alliance (LWHA) energy conservation and demand management (CDM) plan and policies is to promote good stewardship of our environment and community resources. In keeping with our core values of cultivating a sustainable and resilient environment that is here for future generations, LWHA's energy conservation and demand management program will reduce overall energy consumption, operating costs, and greenhouse gas emissions. It will also enable us to provide compassionate service to a greater number of persons in the community. LWHA will also be in compliance with external regulation O'Reg 507/18 Broader Public Sector: Energy Reporting and Conservation and Demand Management Plan.

Through past conservation and demand initiatives, LWHA has achieved the following results:

- 12% reduction in energy use at LMH and 11% reduction in energy use at WDH
- 31,976 kWh decrease in electricity consumption for LMH and 5578 kWh decrease in electricity consumption for WDH
- 102,841 m3 decrease in gas consumption for LMH and 95,119 m3 decrease in gas consumption for WDH
- 197 tonne reduction in carbon dioxide equivalent (tCO_2e) emissions for LMH and 181 tonne reduction in carbon dioxide equivalent (tCO_2e) emissions for WDH

Today, utility and energy related costs are a significant part of overall operating costs. LWHA's annual energy consumption and related costs/emissions for 2018 were:

- Utility costs in 2017/2018 fiscal year were $342,196 for LMH and $252,518 for WDH annually.
- The Hospital's Energy Use Index (EUI) for LMH was 60.4 ekWh/ft^2 and for WDH was 54.6 ekWh/ft^2
- Energy related emissions for 2018 equaled 800 tCO_2e for LMH and 638 tCO_2e for WDH
- Facility related O&M costs are $914,032 for LMH and $818,995 for WDH annually
- Facility capital project costs are projected at $1,500,000 over 5 years for each facility.

With energy management an integral part of business decisions, LWHA can expect to achieve the following targets by 2024:

- 3% reduction in energy use
- 24 tonne reduction in carbon equivalent emissions for LMH and 19 tonne reduction in carbon equivalent emissions for WDH
- $10,265 annually to the bottom line ($102,650 over 10 years) for LMH and $7,575 annually to the bottom line ($75,750 over 10 years) for WDH
- Energy investments will achieve a minimum 10% internal rate of return (IRR) through a blend of short term and long-term payback initiatives.

To further strengthen and obtain full value from energy management activities, a strategic approach will be taken: the organization will fully integrate energy management into its business decision-making, policies, and operating procedures.

Active management of energy related costs and risks in this manner will provide a significant economic return to the organization and will support other key organizational objectives.

Results of Previous Measures From CDM Plan Posted July/2014

In July 2014, LWHA developed goals and devised green initiatives in an effort to decrease the facilities annual energy consumption and resulting greenhouse gas emissions.

The following activities, completed between 2014 and 2019, are associated with managing overall energy consumption, lowering annual operating costs, and reducing greenhouse gas emissions.

LMH – Window and exterior door replacement, exterior LED lighting upgrade, interior LED lighting upgrade, roof replacement and circulation pump replacement

WDH – Window and exterior door replacement, exterior LED lighting upgrade, interior LED lighting upgrade, LED exterior sign upgrade, roof replacement and HVAC upgrade

Both LMH and WDH

- Continuing development of automated building controls to monitor building and operating functions to maximize efficiencies.
- Ongoing review and development of efficiencies with existing equipment with the use of new technologies
- Continuing education for Manager and Staff

Energy Management Vision

LWHA's energy management vision is: Responsible energy management by eliminating waste wherever possible through policy and process changes, ongoing infrastructure improvements and utilizing best practice and technology.

Guiding Principles for Strategic Energy Management

LWHA's energy management will be guided by these principles:

Taking A Strategic Approach:

While LWHA actively manages energy costs by implementing opportunities as they are identified, by acting strategically, LWHA can significantly improve its energy-related performance. Internalizing energy management into our organization's every-day decision-making, policies, and operating procedures will help assure substantial and long-lasting reductions in energy, operating costs, and environmental impact.

Supporting Mission-Critical Goals:

Strategic energy management will directly support LWHA's mission-critical goals of caring for the environment and the community, improving the healing and working environment, and improving the hospital's financial bottom line by reducing unnecessary energy costs. It will also serve to optimize the capacity of existing energy systems to meet current and expanding operational needs, while improving the operational resiliency of the organization. The impacts of LWHA's energy management efforts on those goals will be tracked and reported wherever possible.

Pursuing Long-Term Change to Core Business Practices:

The core of a strategic approach is the consistent incorporation of energy management into our organization's everyday practices and decision making. It also needs to be an integral part of the strategic planning and budgeting processes. Change in energy-related business practice will cover all applications of energy management – new construction and major renovations, existing facility operations and upgrades, and the economic analysis and procurement practices underlying these practices.

Fostering Organizational Commitment and Involvement:

Executive and organizational commitment and involvement is critical to successful strategic energy management. Top management at LWHA will work with facility managers and other key staff to ensure that adequate organizational support and resources are provided to maximize the benefits of energy management to LWHA. Energy management will also be integrated into the strategic planning and capital budgeting processes.

Obtaining Solid Economic Returns:

Energy management investments will yield solid economic returns that meet LWHA's standard Internal Rate of Return and Return on Investment requirements applied through the hospital's capital budgeting process. LWHA will apply consistent financial analysis methods, including life-cycle costing, in order to reduce total cost of facility ownership and operation.

Using Available Resources and Assistance:

Use of national, regional, and local sources of strategic, technical, and financial assistance to help to achieve the organization's energy management goals. These include utility, municipal, provincial and national government programs. It also includes established best practices through a community of practice approach.

The Business Case for Strategic Energy Management

Below are the central business arguments for LWHA's pursuit of strategic energy management. The following section then presents the business proposition – the results of analysis of the energy efficiency opportunities and their associated costs and internal rate of return.

Strengthened Community Leadership and Environmental Stewardship

Energy management is a visible, public commitment to the community and environment. Through energy management, the hospital can provide leadership in promoting sustainable communities, efficient business practices, and environmental stewardship. Faced with a tough market environment that has forced cut backs on hospital support for community activities, 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, as well as employee, comfort with more stable environmental control, and better indoor air quality and lighting. In new facilities more daylight and personal control of comfort contribute to a healing and patient-focused environment, for an improved environment of care. For instance, recent research has found that natural light eases surgical pain and contributes to substantial savings in pharmacy costs.

Improved Financial Health and Operating Cost Reduction

Strategic energy management presents a highly leveraged opportunity to reduce operating costs and positively impact LWHA'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 investments.

Optimization of Capacity to Meet Current and Expanding Operational Needs

Energy efficiency optimizes inefficient or poorly designed and operated equipment/systems so wasted energy system capacity can be reclaimed for current and expanding operational needs. This "free capacity" can eliminate the need to add major new energy capacity and be much less expensive.

Business Proposition

The following are considerations to be included in LWHA's business philosophy and budgetary process. The business proposition is as follows:

- If energy management considerations are integral to relevant business practices, policies, procedures, and decision-making processes, LWHA's energy-related costs can be reduced by an additional 3% over a 5 year period.

- Based on 2017/18 utility rates, this will result in $2053 in LMH and $1683 in WDH in annual value to the bottom line based, or a total $10265 in LMH and $8417 in WDH over a 5-year period. Integration of energy management into organizational decision making and business practices will continue to produce value annually for a much longer period of time.

- It is the goal of LWHA to stay ahead of the curve and reduce energy use faster than the cost of energy increases, thereby contributing to the bottom line. This business proposition requires:

    - An increase in the amount of capital spending dedicated to energy conservation
    - The wise investment of capital spending to modernize and maximize the efficiency of all building systems
    - Continued education of building operators and managers
    - Changing the way building occupants use energy
    - Maximizing building management software use
    - Continuing development of relationships with our local energy providers to maximize incentive programs and rebates

- Develop a program dedicated at changing the culture of all staff members around energy conservation using resources from neighboring hospitals ie. CHESTER energy program used by HPHA, Goderich Alexandra marine and General Hospital and LHSC.

Energy Management Goals

The following are proposed measures that LWHA intends to implement:

Goal: Energy Conservation and Demand Management Plan Approval

- Executive approval and resources.
- Support from key staff (financial management, purchasing/procurement, construction, building operations, etc.).
- Creation of mechanisms/processes to make resources available.
- Clarification and communication of staff roles and responsibilities, performance goals, and energy management reporting.
- Monitoring, tracking and improve performance
- Facility upgrades

Goal: Implement Financial Practices and Decision-Making Processes

- Money spent to achieve energy efficiency is viewed as an investment, not a cost.
- Financial decision makers consistently use life cycle cost analysis (LCCA) on all new construction, major renovations, and equipment replacements over $50,000.
- Decisions about energy management investments will be part of LWHA's high-level, long range process of budgeting for capital and operations.

Goal: Implement Strategic Energy Management Practices

Establish Purchasing Specifications for Energy Efficient Equipment & Services

- Establish and consistently use purchasing specifications that minimize life-cycle costs for energy efficient equipment and services.
  - Establish efficiency specifications for standard equipment routinely replaced (e.g. lights, motors, and unitary HVAC equipment).
  - Establish efficiency guidelines that apply LCCA for custom equipment purchases (e.g. chillers).
  - Establish efficiency standards for design and construction, and for building operations and maintenance services.

Implement Enhanced Design & Construction (D&C) Practices

- Implement improved new construction practices in all projects $500,000 that specify early team collaboration and "integrated design" (ID).

  - Integrated design required for funding.
  - RFPs, contract terms & conditions, & fee structures will support ID.
  - Apply established purchasing procedures and specifications.
  - Include incentives and tax credits wherever available.

- Educate all owner's project managers or construction managers and contractors on integrated design and their respective roles in master planning pre-design, design, construction, testing, commissioning, and monitoring.

- Set and meet clear energy performance targets for new buildings; measure and improve over time.
  - Establish baseline for measuring performance goals (e.g. code, or national reference standards like ASHRAE 90.1).
  - Measure performance and improve over time.

- Specify commissioning as a standard procedure.
  - Retain the services of an independent third-party commissioning agent.
  - 100 percent of fundamental building systems and elements will be designed, installed, and calibrated to operate as designed.
  - Design team, commissioning agent, and building operators will work closely throughout the design process and occupancy to ensure good transition.

Improve Building Operating Performance

- Equipment tune-up and improved operations and maintenance (O&M) will achieve the following results while supporting patient care, and facility comfort and safety.

Implement Cost-Effective Facility Upgrades

- Implement equipment and system upgrades where justified by life-cycle cost analysis.
- Expand use of qualified service providers as needed. Develop standard RFP documents, contract terms, and reporting standards.
- Utilization of standard RFP documents and engineering standards.

Actively Manage Energy Commodity

- Minimize utility costs and exposure to market risks. Utility costs include natural gas, electricity, water, and sewer.
- Participate in the energy/utility regulatory process. ie. Health Pro

Goal: Monitor, Track, and Reward Progress

- Track progress on the CDM plan
- Track energy usage monthly
- Reward staff for successes.

Conclusion

LWHA is dedicated to energy improvement through on-going operations, past projects, future projects and will target efficiencies with conservation. Dedication to changing the culture of all staff by establishing an energy program within the facilities. Continual quality improvement processes that aid in making changes. Energy conservation and efficiencies is a journey that LWHA is undertaking and embracing.