



Honeywell's Luis Rodrigues with Kate Butler, Bill Goobie and Blaine Lynch, who accepted the award on behalf of the Horizon Health Network.

# LEADING THE CHARGE

## Horizon's Energy Network makes health authority greener, leaner

**H**ospitals devour more energy than any other commercial building, with the exception of food and beverage stores. This is largely because of their operating hours, number of occupants and the sophisticated equipment needed for patient care.

In an effort to curb consumption at its 12 hospitals and more than 100 medical facilities across New Brunswick, the Horizon Health Network established the Energy Network in 2013. The standing committee is made up of full-time staff volunteers with varied backgrounds — from engineering and energy management to plant operations — all of

which are passionate, dedicated and intrinsically motivated to improving energy performance.

To date, the Energy Network has achieved measurable and significant reductions in energy usage — 39 million equivalent kilowatt hour (kWh). It has cut greenhouse gas emissions by 9,500 tonnes and achieved \$3.23 million in actual energy cost avoidance. This outstanding success is one of the reasons the health authority earned this year's Wayne McLellan Award of Excellence in Healthcare Facilities Management.

"It's a real honour to have the work we're doing recognized," says Horizon's

regional director of facilities, engineering and property management, Blaine Lynch, who oversees the Energy Network. "We were glowing with enthusiasm and 'energy' when we accepted the award, which has since lit a greater fire under us."

The six-member Horizon Energy Network team includes Lynch, committee chair Bill Goobie (manager of major construction, Moncton), Todd Bryenton (chief engineer and energy coordinator, Miramichi), Ralph Mayfield (director of physical resources, Saint John), Dean Lake (manager of plant operations and energy management, Fredericton) and Kate Butler, energy manager with health

services at Service New Brunswick (formerly Facilicorp NB).

A driving force and leader in energy efficiency, Butler attributes the success of the Energy Network to its collaborative and continuous improvement approach to energy management. This process involves benchmarking facilities, including normalization for weather, identifying and analyzing energy projects (large and small), requesting funding, assisting in implementation and then monitoring projects for expected energy savings and other benefits. Results are reported and communicated. Successful projects are then rolled out to other facilities.

“We’re always going through this plan-do-check-act framework,” says Butler, who adds that the introduction of an energy management information system (EMIS) in winter 2014, has been crucial in effectively measuring, verifying and managing energy consumption.

The EMIS monitors energy consumption in real-time and compares it to a baseline. This helps the network determine where energy is being wasted, either by human misjudgment, maintenance issues or technological reasons. The outcome is a continual ability to better manage energy use, which results in a reduction of energy consumption and, subsequently, operational costs.

For example, modifications and optimizations at Saint John Regional Hospital to use a heat recovery chiller as the base load chiller instead of the older, less efficient chiller, along with the installation of variable speed drives (which allow pumps to modulate on load demand), has resulted in maximum heat recovery and a reduction in carbon dioxide by 1,435 tonnes annually.

The tool has brought big benefits to Miramichi Regional Hospital, too. Through its use, the hospital has reduced

## SUPERIOR SAVINGS

To date, the Energy Network has achieved \$3.23 million in actual energy cost avoidance, cut greenhouse gas emissions by 9,500 tonnes and reduced energy consumption by more than 39 million equivalent kWh, which is equal to the energy used by 6,600 vehicles in one year. Last year alone, the Energy Network reduced greenhouse gas emissions by 3,800 tonnes and found more than \$220,000 in no cost operational improvements.

Miramichi Regional Hospital has made significant improvements over the past three years to its wood boiler plant, reducing oil consumption by 240,000 litres annually. This is a cost savings of \$306,000 per year. The hospital has also decreased water consumption by more than 15 million litres annually, and achieved more than \$60,000 in annual energy cost avoidances by increasing air handling unit supply temperatures by 2 C.

More than \$3.3 million in upgrades has been implemented throughout Horizon since the inception of the Energy Network. Projects include LED lighting retrofits at five hospitals, reducing energy consumption by more than 433,000 kWh per year (\$43,300 in annual savings); introduction of occupancy sensors, resulting in 45,000 kWh and \$4,000 in annual savings; and enhanced air handling units, which have reduced energy consumption by 2 million equivalent kWh annually, resulting in \$280,000 in cost savings per year.



water consumption by more than 15 million litres annually. The biggest reduction to date has been through the reduction of steam production due to improved plant efficiencies. In another instance, the EMIS helped building operators quickly identify an abnormal increase in water consumption — approximately 45,000 litres per day. Through investigation, they were able to pinpoint the culprit (a broken timer) and rectify the situation. This has helped sell the addition of water meters and the EMIS to other healthcare facilities.

Communication among Energy Network team members and across Horizon has also played a key role in energy savings successes. The network meets six times a year to discuss energy efficiency initiatives and uses a variety of

tools to engage staff, including training sessions; energy management plans and annual reports detailing energy consumption, benchmarks, energy savings and projects completed; Horizon Connects, the public corporate newsletter; Connects Extra, the internal blog page; and the department page on Skyline. These resources provide tips to staff and share ongoing successes regarding environmental stewardship and energy reduction initiatives.

“The openness and collaboration of the team allows the network to move ideas to business case development and then implementation, provided the projects are viable and funding is available,” says Butler. “This also shows great leadership and how effective leadership can result in energy efficiency success.” ■