

## From Benchmarking to Action

### Partnerships Elevate Northwest Energy Efficiency Success

The healthcare sector uses 836 trillion BTUs of energy annually and is fertile ground for a market transformation initiative that promotes sustained adoption of energy-efficient business practices. While healthcare systems and hospitals have embraced one-off energy efficiency projects that have a cost reduction value proposition, it is historically challenging to stimulate broad organizational commitment to the Strategic Energy Management (SEM) processes needed to achieve significant energy savings and market shift behavior. Because of this opportunity and unique market challenge, the Northwest Energy Efficiency Alliance (NEEA) focused on the healthcare sector as a major initiative for energy efficiency market transformation. Through its Hospital and Healthcare Initiative (HHI), NEEA pioneered early work in the development of SEM, helping selected hospitals in the region plan and execute organization-wide commitments to energy efficiency.

#### About Energy Efficiency Commitment (E2C)

The current economic state of the healthcare industry has forced mergers and restructuring as healthcare systems struggle to remain financially viable. In this environment, healthcare executives may not often view the initiation of new SEM efforts or continuing energy-efficient projects as a priority, because the immediate fiscal benefit does not appear sizeable when compared to other operational activities. This places energy efficiency projects in “competition” with other initiatives and often makes it difficult for SEM efforts to garner attention or budget. Recognizing that SEM planning is a substantial commitment, often beyond the organizational resources of many healthcare institutions, NEEA created a partnership with the American Society of Healthcare Engineering (ASHE). ASHE is the preeminent healthcare organization in the United States representing facility professionals working in the hospital sector. ASHE’s Region 10 serves Washington, Oregon, Montana, and Idaho.

In partnership with the U.S. Environmental Protection Agency (EPA), ASHE developed a voluntary program, the Energy Efficiency Commitment (E2C) that uses an EPA tool, Portfolio Manager, to benchmark and score the energy performance of buildings. The E2C program enrolled hospitals that voluntarily took on the challenge of energy bench-

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SEM is the integration of energy management into standard business practices using a continuous improvement approach to manage energy performance.

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marking and offered recognition to those facilities who achieved significant energy reductions over time. Few Northwest hospitals participated in the E2C program, so beginning in 2009, NEEA, in association with ASHE Region 10 leadership, worked together to drive participation and excitement in support of E2C in the Northwest.

For NEEA, the Region 10 E2C program offered an opportunity to instill the best practice of energy benchmarking and reporting across many Northwest hospitals and offered services complementary to the HHI strategic energy management practices, specifically by allowing hospitals to capture, track and visualize the intensive SEM efforts and energy savings.

## **Initiating the Region 10 E2C Effort**

In 2009, NEEA began recruiting interested hospitals to participate in the E2C. To facilitate this recruitment effort, NEEA and Region 10 ASHE developed and co-branded a dedicated web site. Through outreach and using informational hubs like this site, both NEEA personnel and volunteers from ASHE Region 10 urged hospitals in the region to sign up and commit to energy benchmarking.

To facilitate participation, NEEA provided technical assistance to hospitals in setting up their Portfolio Manager accounts and with data entry to capture building physical characteristics and the 12 continuous months of energy use data needed to establish an energy use index (EUI). Additionally, NEEA offered webinar trainings, tools and resources as well as one-on-one support to help E2C hospitals become familiar with energy benchmarking. A baseline year of 2010 was selected as the goal to get all participating hospitals with a completed Portfolio Manager account. The results were successful, with 44 hospitals from all areas of the region making the commitment to participate in the program.

## **From Benchmarking to Action: E2C Results**

While energy benchmarking and reporting are key elements in a comprehensive approach to energy management, the key goal is to achieve and sustain real energy savings. From 2011 through 2012, NEEA monitored the cohort of 44 participating E2C hospitals for benchmarking practices, encouraging that they become routine and provided technical assistance as needed.

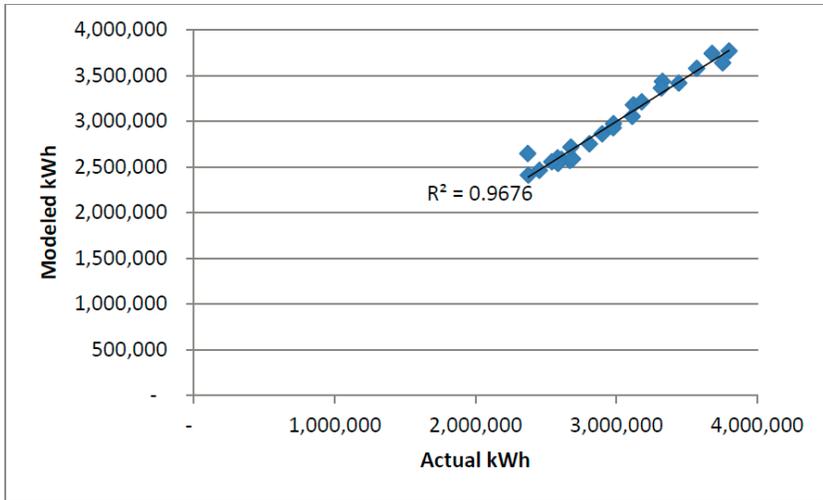
Over the two year period, it was observed that routine updating of account information with new energy use data became much more prevalent across the cohort, resulting in a 2 percent reduction in energy use.

To transition E2C participants from reporting to action, NEEA organized a “Peer Technical Forum” – a ten part series of webinars and interactive discussions on relevant healthcare energy efficiency topics, supplemented by a host of SEM tools and resources that NEEA developed and promoted to participants. These events brought together the community of E2C participants along with technical experts to stimulate thinking about opportunities for energy saving in both improved building operations, and from capital projects and enable participants to initiate SEM projects.

To understand the effects of the E2C program, trainings, education and technical outreach efforts and ascertain levels of energy savings at individual hospitals as well as the cohort, NEEA engaged an energy engineering firm to analyze E2C energy performance data, normalized for weather impact, as measured against the 2010 baseline year. The results were impressive: in 2011, the energy savings analysis showed that E2C hospital participants, in aggregate, reduced their energy use by 1.6 percent when compared against the 2010 baseline. Further analysis of the 2012 year revealed addi-

tional savings of .45 percent, resulting in total energy use reduction of 2 percent and demonstrating persistence in savings and participation. NEEA shared the results of the analysis, including individual hospital results, with the cohort as well as with each hospital's serving utility.

**Figure 1 – Modeled vs. Actual Energy Use**



**Summary of Results**

Table 1 summarizes the energy savings from the 43 participants.

**Table 1 – Energy Savings Summary**

|                      | Electric (aMW) | Gas (Therms)  | Steam (klbs)  | Oil (Gallons)  | Total Energy (kBtu) |
|----------------------|----------------|---------------|---------------|----------------|---------------------|
| Baseline Use         | 69.61          | 21,856,572    | 278,612       | 53,426         | 4,463,158,596       |
| <b>Total Savings</b> | <b>1.09</b>    | <b>32,135</b> | <b>16,888</b> | <b>(5,975)</b> | <b>55,388,325</b>   |
| % Savings            | 1.6%           | 0.1%          | 6.1%          | -11.2%         | 1.2%                |

**Table 1 – Regression Analysis Results**

| Regression Analysis Results |                        |                    |                       |                      |               |
|-----------------------------|------------------------|--------------------|-----------------------|----------------------|---------------|
| Baseline Electric (kWh)     | Electric Savings (kWh) | % Electric Savings | Baseline Gas (Therms) | Gas Savings (Therms) | % Gas Savings |
| 565,976,698                 | 2,568,780              | 0.45%              | 24,357,452            | (85,410)             | -0.35%        |

**Conclusion**

Energy benchmarking is a critical first step in understanding building energy use. The partnership to promote energy benchmarking was a success: 44 of the region’s hospitals participated in the ASHE Region 10 E2C program and the participation resulted not only in participation related to the reporting and tracking of energy use, but also in an important 2 percent reduction of energy use. As a result, the national ASHE decided to model the success of the Region 10 E2C effort. To facilitate this model, ASHE created a new broad platform of support for its members, entitled the Sustainability Roadmap, that mirrors the technical support NEEA developed through the HHI and E2C partnership for a number of key sustainability and energy-related efforts. To specifically elevate energy efficiency efforts, ASHE branded E2C to stand for “Energy2Care”. With acknowledgement of the Region 10 effort on its website, Sustainability Roadmap for Hospitals, ASHE effectively transitioned the Northwest experience to become the chief supporter and proponent of healthcare energy benchmarking.