GreenWize Energy Solutions

Save Energy and Money

Case Study:

Energy Management System In Convenience Stores

Project Overview

In an effort to try to cut operating costs in a difficult business climate, this North Carolina based local C-Store chain decided to test energy management as an option.

In summer 2013 the company decided to install a Greenwize Energy Management System (EMS) at a pilot location. This store was chosen as the pilot location because it had very high energy bills and considerably higher electrical demand levels than the other stores. In an area where electrical demand typically accounts for 35-45% of monthly power bills, any investment made in an energy savings or control system would have to provide a significant demand reduction at the location.

The company chose to use Greenwize EMS because of the unique savings opportunities it offered through its enterprise-wide central control and monitoring platform. Greenwize EMS offers particular benefit to customers in high demand charge or Time-Of-Use billing areas due to its ability to reduce demand across a wide range of building loads.

The customer was also especially interested in the unique predictive diagnostics capabilities of the Greenwize EMS which promise significant maintenance cost reductions.

"Greenwize EMS gave us visibility into day to day energy use and waste at our locations. It allowed us to seize control of and reducer a large operating expense that we were previously unable to do anything about.

Key Objectives

With energy and maintenance costs continuing to rise, this chain operator found it increasingly difficult to operate profitable stores in the low-margin convenience store sector. Greenwize EMS offered a solution that would reduce both energy and maintenance expenditure.

By centralizing control of their stores' high-energy consumers such as HVAC, Refrigeration and Lighting, EMS would allow them to control exactly how and when these systems could use energy.

By combining strict scheduling with Greenwize EMS' unique intelligent control algorithms, they could expect to realize significant savings on energy cost and demand charges far beyond those offered by traditional control options.

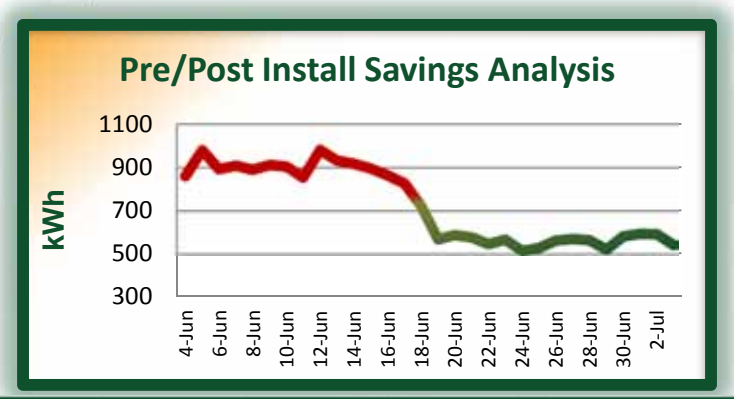
Method & Results

It was recommended that the best method to evaluate savings was to independently monitor combined electrical consumption of the unitary HVAC unit and the two refrigeration systems for a period of 15 days prior to installation of the Greenwize EMS on June 18th and then for another 15 days immediately following installation. Dent PowerScout3 electronic meters were used for the purpose of measurement.

Controls were installed on the two walk-in/reach-in coolers in conjunction with dual speed electronically commutated motors in each evaporator. A single HVAC controller was also installed. Installation took approximately 3 hours to complete.

After installation, staff at the store were consulted every three days for input and no customer or staff complaints related to comfort or temperature were noted.

Electrical demand and consumption for the 15 days prior to installation was shown to be significantly higher than for the 15 days after installation despite higher external temperatures in the 15 days after installation.



	15 Days Pre-Install	15 Days Post-Install	Pre/Post Savings	Annualized Savings
kWh Used	13,360kWh	8,445kWh	4,914kWh	119,574kWh
Total Cost	$ 1,353.32	$ 855.49	$ 497.83	$ 12,113.78