

UI Small Business Plan Saves Convenience Store's \$2,800 in Annual Energy Cost

Bridgeport News, a combination newsstand and deli-mart, recently finished a "double whammy" \$6,700 energy-savings project under UI's Small Business Energy Advantage program. The project will cut its yearly electric bill by more than \$2,800.

"I say 'double whammy' project because it made both our lighting and refrigeration more energy efficient," storeowner David Bobbie said.

Efficient Lighting & Maintenance of Brookfield, CT, a UI-approved vendor, conducted a free energy audit and submitted a two-part proposal. "It showed Mr. Bobbie how to save money by cutting his energy use with a top-to-bottom, inside-and-outside retrofit of the store's lighting and a control system on his beverage cooler, said Tom Phillips, Efficient Lighting's owner and president.

"When I saw that some of the project costs could be offset by the UI incentive and whatever balance was left could be financed by a zero interest loan from UI, it clearly made good business sense to OK the proposal," Bobbie said.

"We replaced the lighting in the store, basement and office/breakroom area, as well as the outdoor lighting," Danny Anderson, Efficient Lighting's General Manager, said. "The inside work mostly was switching from inefficient T12 fluorescent lamps to energy-saving T8 technology and adding reflectors and electronic ballasts. Outside, we replaced two 300W fixtures with two brighter 75W compact fluorescent flood fixtures."

According to UI Program Administrator Dennis O'Connor, "Lighting alone can account for 20-to-35% of a small business's total energy consumption. An energy-efficient lighting system can cut energy related costs by approximately one-third."

The store's 12,204 kWh reduction as result of the lighting retrofit broke down as follows:

Store 6,671 kWh

Office/breakroom area 2,517 kWh

Basement 1,021 kWh

Exterior lighting 1,995 kWh

Bobbie sees other benefits. "The new lighting gives my store a more appealing, contemporary look," he said, "and the brighter outdoor lighting makes my night-time customers feel safer and more secure."

Installing energy-conserving controls on the store's cooler saved another 12,798 kWh. "These controls are energy-savers because they govern the on-off operation of various components, such as evaporator fans, door heaters and lights, all of which might run 7/24, needlessly wasting energy," Anderson said.

The evaporator fans circulate the inside air that cools the beverages and, in many refrigeration systems, run continuously, unnecessarily using up energy. The controls save energy by automatically turning the fans off when the cooler's compressors, whose job in the refrigeration cycle is to remove heat, aren't running.

Another energy-saving step concerned the cooler's glass doors. When the cold air in the coolers hits the warm air in the store, condensation forms on the doors, obscuring customers' view. To prevent this, heaters are installed in the door and door frames to keep the glass condensation-free.

"These heaters generally are on 24 hours a day," Anderson said. "The controls reduce the enormous amount of energy that requires by monitoring the store's dew point and humidity. When the store is dry, like in winter or in summer when the air conditioning is on, the system automatically turns the heaters off. When in-store humidity creates a moisture sensation, the heaters go on."

Finally, shut-off controls for the lights inside the cooler were installed. Anderson pointed out that 95% of the cooler case lights are energy devouring High-Output lamps, which are on night and day. The shut-off cuts their tremendous energy draw because the lights go on only during store hours.

"Commercial refrigeration controls are very effective," O'Connor said. "They can reduce the amount of energy needed to run the evaporator fans by as much as 30% and, for the door heaters, by 40-to-60%."

The total energy savings of 12,798 kWh Bridgeport News reduced its energy use by 12,798 kWh as realized as a result of this part of the project, broke down as follows:

Evaporation fans 6,600 kWh

Door heaters 5,500 kWh

Night set backs 698 kWh

UI's Small Business Energy Advantage program echoes Bobbie's "double whammy" phrase. "First, we pay incentives to help offset project costs—40-to-45% for a lighting retrofit and up to 50% for refrigeration controls. For Bridgeport News, the combined incentive equaled \$4,235," O'Connor said. "Second, we will finance the balance with an interest-free loan, for up to two years."

Now that the work is done, Bobbie couldn't be happier. "But I wouldn't have undertaken this project on my own if UI's Small Business Energy Advantage hadn't made it feasible."

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