



Empowering you to make smart energy choices

# SMALL BUSINESS ENERGY ADVANTAGE

## ENERGY EFFICIENCY CASE STUDY: McDonald's, Vernon, CT

This program provides cost-effective, turnkey, energy-saving products and services for small business customers. Benefits include financial incentives to offset the premium costs associated with energy-efficient technology. This program is one of several innovative solutions offered by Energize Connecticut and administered by Connecticut's utility companies.

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### Energize Connecticut and Eversource helped one McDonald's restaurant:

- Save approximately \$8,917 and 67,048 kilowatt-hours annually.
- Defray their investment with a \$16,769 incentive.
- Achieve a lifetime savings of over 821,653 kilowatt-hours.

### The electricity saved on this project over the lifetime of the measures is the equivalent of approximately:

- 33,848 gallons of oil not burned, or
- 881,172 pounds of carbon dioxide (CO<sup>2</sup>) emissions avoided, or
- 411,763 pounds of coal not burned, or
- 98 homes provided with electricity for one year, or
- 77 cars taken off the roads.





NEW INDOOR LIGHTING, WHICH REDUCED WATTAGE WITHOUT DECREASING ILLUMINATION LEVELS, AND OCCUPANCY SENSOR LIGHTING CONTROLS SAVE APPROXIMATELY 29,078 KILOWATT-HOURS ANNUALLY.

## Background

McDonald's in Vernon is one of eight restaurants comprising a family-owned-and-operated McDonald's franchise that dates back to 1961, the same year that originators Dick and Maurice MacDonald sold their interests in the trailblazing fast-food company to its franchising head, Ray Kroc. The franchise is now managed by twin brothers Tim and Tom Walsh, the grandsons of the founder, in partnership with their father and uncle. The Walsh brothers, who joined the operation as teenagers in the early 1980s, take considerable pride in the properties and are committed to ensuring that each of them is maintained to maximize customer comfort, employee productivity and energy efficiency.

## The Challenge

The Walsh brothers are constantly looking for ways to reduce their operation's energy consumption, both to cut overhead and to be environmentally responsible corporate citizens. To this end, they've initiated such practices as labeling and color-coding all lights and equipment to let employees know precisely when things should be turned on and off to limit unnecessary use. "I track our kilowatt-hour use each month," says Tom Walsh. "What we hope to achieve is to reduce our energy use as much as possible with efficient equipment and innovative thinking, and take it to the next level.

## The Solution

To approach that "next level," Eversource worked with a Small Business Energy Advantage (SBEA) program contractor to upgrade the Vernon property's lighting and refrigeration technology. The resulting work, all of which has been monitored and validated by Eversource technical personnel, is expected to provide an estimated annual energy savings of more than 67,000 kilowatt hours and reduce peak demand by 4.4 kilowatts. An incentive payment made the proposition much more viable.

The incentive, covering up to 50 percent of the total cost, allows for a return on the initial investment in less than two and a half years, half the time it would ordinarily take.

The brothers were so impressed with the results that have been achieved, that they implemented similar energy efficiency improvements at all eight of their restaurants.

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"When we looked at partnering with Eversource and the incentives offered through the Energize Connecticut program, it made a lot more sense."

– Tim Walsh

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AFTER INDUCTION LIGHTING WAS USED IN THE BUILDING'S SOFFITS.



"There haven't been any problems at all (with the improvements). It was pretty seamless and didn't interfere with business."

– Tim Walsh

## Lighting

Upgrades of the property's outdoor lighting included replacing (12) 400-watt HID (high intensity discharge) metal halide pole lights with an equal number of 200-watt induction lights, and the replacement of (19) 175-watt HID metal halide soffit lights with 23-watt induction fixtures.

Induction lighting is an advanced, more energy-efficient form of fluorescent technology. The longevity of induction lamps, which are estimated to have about four times the lifespan of HID lamps, is due to the elimination of electrodes, which degrade over time and are the components most likely to fail within a lamp. This "electrodeless" design produces illumination by inducing a current in the lamp's gas tube via an induction coil. The induced current excites the phosphor coating inside of the tube, causing the coating to emit light. The resulting durability of induction lighting, which can last up to 100,000 hours, makes it especially beneficial for parking lot use, given the high cost of the specialized lifts and labor involved in maintaining and replacing outdoor pole lights. These improvements in outdoor lighting are

expected to result in total annual energy savings of 25,312 kilowatt-hours (about a \$3,367 annual savings) in energy costs alone. The savings are even greater when operation and maintenance costs are factored in for lamp replacement.

Additionally, the existing T8 fluorescent lighting in the restaurant's interior was upgraded by installing new, advanced low-powered ballast fixtures that reduced wattage without decreasing illumination levels. By utilizing low-power ballasts and reflectors that permitted the number of lamps per fixture to be reduced from three to two, each fixture now uses only 44 watts, whereas the dining-room lights previously consumed 76 watts and those behind the counter and in the restrooms used 110 watts. With additional savings from the installation of seven occupancy sensor lighting controls, the property's total annual indoor lighting energy savings are expected to be approximately 29,078 kilowatt-hours (about a \$3,867 annual savings).

**Total lifetime savings from energy-efficient outdoor and indoor lighting measures: 695,053 kilowatt-hours.**



OUTDOOR HIGH INTENSITY DISCHARGE METAL POLE LIGHTS WERE REPLACED WITH INDUCTION LIGHTS, WHICH HAVE FOUR TIMES THE LIFESPAN AND MAKE THEM IDEAL FOR PARKING LOT USE.

## Refrigeration

By installing door heater and evaporator fan controls, along with electrically commutated motors, the Walshes have managed to achieve dramatic reductions in refrigeration-unit energy use. "They monitor the temperature of the cooler, so it doesn't need to be running all the time," notes Tim Walsh. The result is that whereas "normally we used four or five fans, we've now gotten the unit down to using three."

**Total lifetime savings from energy-efficient refrigeration measures: 126,600 kilowatt hours.**

## Benefits

- The SBEA program offers a variety of incentive structures to offset the cost of energy-efficient equipment.
- To cover the customer's share of the costs, the SBEA program offers a zero-percent financing option to qualifying customers with a maximum loan term of 36 months.
- Energy upgrades translate into customer savings on monthly energy bills for the life of the measures.
- Eversource provides oversight and inspection.

*(Small business customers with an average 12-month peak demand between 10 kilowatts (kW) and up to 200 kW are eligible. Program measures subject to change without notice.)*

## The Bottom Line

Total cost for all project measures:	\$ 35,551
Incentive paid to McDonald's:	\$ (16,769 )
Net cost:	\$ 18,782
Monthly loan payment months (Zero percent interest)	\$ 722/26
Net monthly savings: (During the loan period)	\$ 21
Net monthly savings: (After the loan period)	\$ 743

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