



Empowering you to make smart energy choices

SMALL BUSINESS ENERGY ADVANTAGE

ENERGY EFFICIENCY CASE STUDY: Fish Family Farm, Bolton, 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, oversight and inspection, and zero percent financing to qualified customers. This program is one of several innovative solutions offered by Energize Connecticut and administered by Connecticut's utility companies.

To find energy solutions for your business, call 877-WISE-USE (877-947-3873) or visit: EnergizeCT.com

Energize Connecticut and Eversource helped the Fish Family Farm:

- Save approximately \$5,600 and 31,913 kilowatt-hours annually.
- Defray its investment with a \$16,171 incentive.
- Achieve a lifetime savings of approximately 395,816 kilowatt-hours.

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

- 16,486 gallons of oil not burned, or
- 429,191 pounds of carbon dioxide (CO²) emissions avoided, or
- 200,557 pounds of coal not burned, or
- 47 homes provided with electricity for one year.





Background

The Fish Family Farm, a family-owned creamery and dairy farm located in Bolton, Connecticut, is one of the state's few remaining dairy farms that milk, pasteurize and bottle its own milk. Founder and owner Donald Fish always dreamed of owning a farm that he could share with other people, so he purchased the 211-acre farm in 1981 and opened it to the public. Every year, thousands of visitors take tours, pet the farm-born Jersey cows, watch milk being bottled and taste a scoop of homemade ice cream from the self-service farm store. Don is dedicated to keeping the Fish Family Farm a locally owned operation that has the least impact on the environment as possible.

The Challenge

Powering the Fish Family Farm's bottling equipment is one of its biggest expenses. According to Don Fish, most of the farm's lighting and equipment was from the 1950s and in need of replacement. Reducing energy consumption and costs associated with the bottling equipment in particular were a big priority for Don, but coming up with the capital needed for new, more energy-efficient systems was a significant hurdle for the small business owner.

The Solution

When Don heard about the Small Business Energy Advantage (SBEA) program, he thought, "It seemed like a no brainer." The financial incentives, no-interest loans, and technical assistance offered through the program made it possible for Don to invest in the upgrades he needed for his farm's lighting and refrigeration equipment.

To ensure proper installation, Eversource worked with an SBEA program contractor and monitored the entire project, including an initial no cost, no obligation assessment to determine opportunities for energy savings and projected costs for the necessary upgrades. Eversource then reviewed the contractor's assessments to ensure reasonable energy savings before any work began. The assessment found that several lighting and refrigeration upgrades could be made to reduce the farm's energy usage.

Lighting

To lower the farm's lighting costs, dozens of existing fluorescent lamps were upgraded to new, reduced wattage lamps with advanced low-powered ballast fixtures that significantly cut down electricity use without decreasing illumination levels. Sixteen 60-watt incandescent light bulbs were also exchanged

for compact fluorescent lights. CFLs use up to 75 percent less energy and last up to 10 times longer than incandescents.

Total lifetime savings from energy-efficient lighting throughout the facility: 100,516 kilowatt-hours.

Refrigeration

Upgrades to the farm's refrigeration system were made to help further reduce energy usage and costs. A heater control for five doors was installed, reducing electric

resistance heat in the doors to the amount only needed to overcome moisture. This prohibits condensation from forming, reduces rust, and prevents mold and mildew from growing.

Additionally, three electronically commutated evaporator fan motors were installed to reduce electrical consumption and reduce

Financial incentives made it possible to purchase new, more energy-efficient equipment - helping our business and the environment."

- Don Fish

waste heat. Fan controls on the motors reduced overall fan runtimes to maintain lower temperatures longer with less electrical consumption.

The farm also replaced their 49-year old commercial ice cabinet with a new energy-efficient model. The new ice cabinet allows them to select the amount of ice they need and to produce ice at night, when energy costs are lower. The chilled water used during production and from the farm's run off circulates only during the day, turning the unit into an instant cooler. The ability to shift costs to off-peak times is a valuable benefit.

Total lifetime savings from energy-efficient refrigeration controls and equipment throughout the facility: 204,535 kilowatt-hours.

Variable Frequency Drive

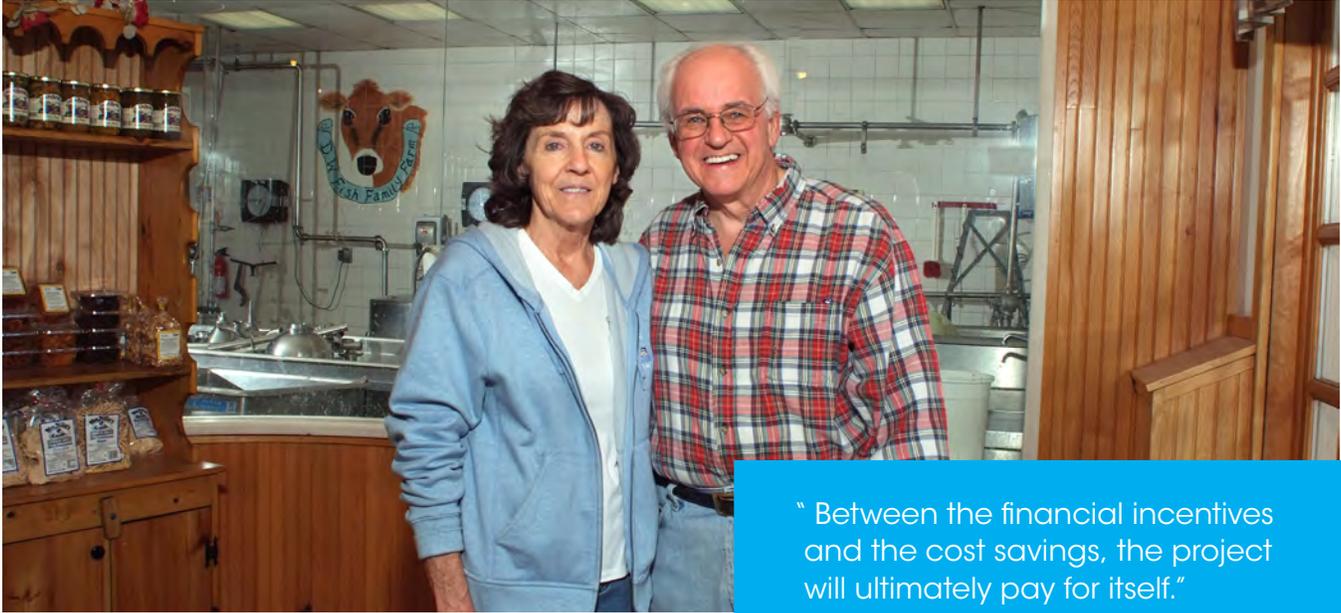
To increase the efficiency of the farm's milking machine, a variable frequency drive (VFD) was placed on the machine's vacuum pump to control the flow of electrical power supplied to the unit's motor. Given the farm can



A VARIABLE FREQUENCY DRIVE WAS PLACED ON THE FARM'S MILKING MACHINE VACUUM PUMP, ALLOWING THE VOLUME OF POWER MOVED TO MATCH SYSTEM DEMAND.

not milk all of its cows at once, the VFD eliminates the hard stops and starts and saves energy by allowing the volume of power moved to match the system demand.

Total lifetime energy savings from the VFD: 90,765 kilowatt-hours.



“ Between the financial incentives and the cost savings, the project will ultimately pay for itself.”
 – Don Fish

Don’s experience with the Small Business Energy Advantage team led by Eversource was a very positive one. “The project leaders were so professional and knowledgeable and helped us through the entire process. I believe every business should take advantage of this opportunity to lower their energy usage and costs,” he said.

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:	\$ 35,933
Energize Connecticut incentive paid to Fish Family Farm:	\$ (16,171)
Annual estimated electric savings based on rates at time of project:	\$ 5,600
Estimated payback time for Fish Family Farm’s investment:	3.52 years
Net cost:	\$ 19,762

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