

ENERGY PROJECT DEVELOPMENT CASE STUDY DAIRY FACILITY

Financials

- ◆ Annual Energy Cost Savings: \$231,889
- ◆ Average Project IRR: 48%
- ◆ Total Turnkey Installed Cost: \$466,824
- ◆ Simple Payback: 2.0 years

Description of Facility

Production Areas

- ◆ Administrative Offices
- ◆ Refrigerated Warehouse
- ◆ Dry Goods Warehousing

Products produced included:

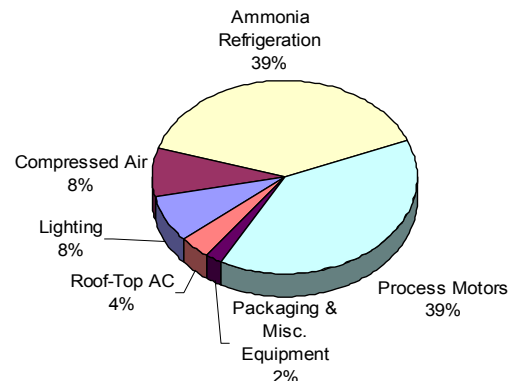
- ◆ Sour Cream
- ◆ HTST Pasteurized Milk
- ◆ Cottage Cheese
- ◆ Coffee Creamers
- ◆ Yogurt
- ◆ UHT Extended Shelf Products



Facility Energy Use

An energy balance was performed to evaluate how energy cost was distributed throughout the facility. This is sound engineering practice and was used as a reality check to ensure that the predicted savings are not unrealistic given how much energy was consumed by the system in the present “baseline” condition. The pie chart to the right shows the results of the facility energy balance. The energy balance analysis also helped focus the investigation to those areas that had the best potential to significantly impact the bottom line.

Electric Consumption By Category



Summary of Implemented Energy Savings Opportunities

Compressed Air	Ammonia/Sweet Water System	Steam System	Process Improvements	Lighting Systems
Enhanced Storage	Replaced 30 yr old Ice Builder	Boiler Sequencing Optimization	Installed Improved Homogenization Valve	ShatterShield T-8 Lamps, Electronic Ballasts
Pressure Regulation	Centralized VFD Pumping	Repair/Replace Failed Traps	Replaced HTST Heat Exchangers	Compact Fluorescent Lamps
Leak Remediation		Blow-down Heat Recovery		Pulse Start Metal Halide
Compressor Sequencing	Installed S.S. Falling Film HX	Redesigned Condensate Receiver		Occupancy Sensors