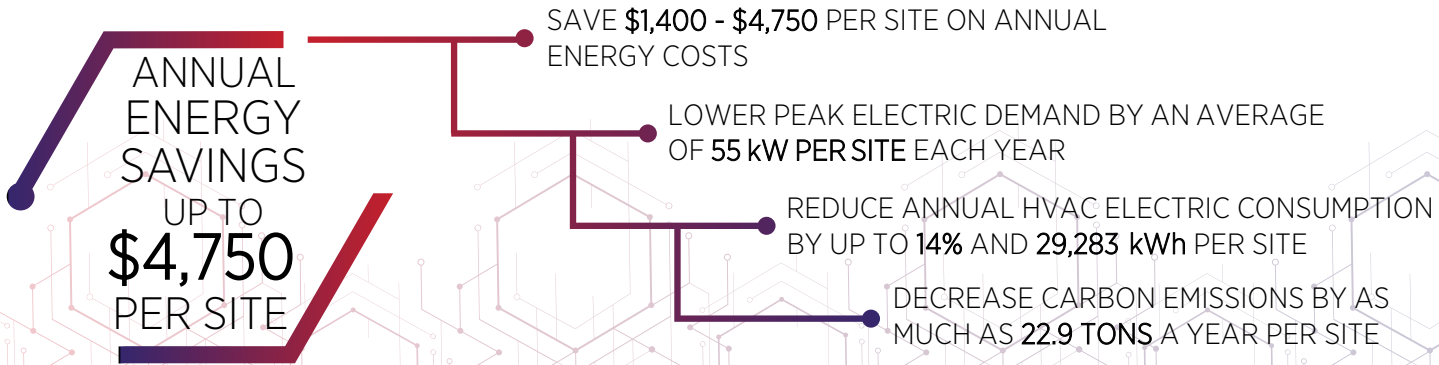




HOW ENCYCLE CAN HELP GROCERY STORE CHAINS ACHIEVE SUBSTANTIAL SAVINGS ON THEIR HVAC ENERGY COSTS, CONSUMPTION, AND PEAK DEMAND.

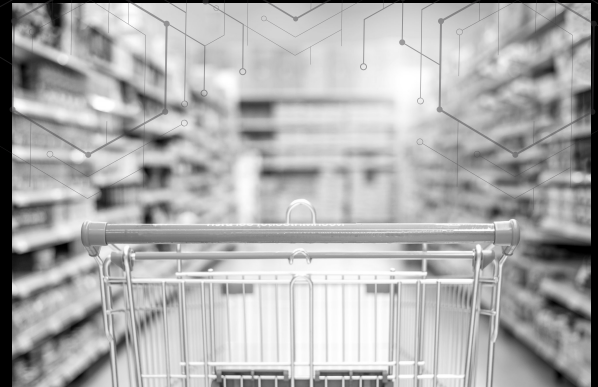


GROCERY AND SPECIALTY FOOD STORES

Heating and cooling are among the highest areas of energy consumption for every retailer. With extreme weather patterns increasing and natural gas prices surging, the costs associated with HVAC-related energy consumption will continue to rise.

Managing HVAC energy use is especially challenging for grocery stores because they must balance peak demand and refrigeration loads with shopper comfort. Supermarket refrigeration alone can account for 50% of total energy use due to its massive size and continual freezer door openings. Because of this, lean facility teams tend to focus their maintenance efforts on these energy-intensive systems while HVAC systems understandably go under-maintained.

This case study demonstrates how three stores with different building sizes and HVAC systems from two well-known grocery chain customers can automate energy savings and fault detection with scalable technology deployments.



CUSTOMER CHALLENGES

- Achieve reductions in HVAC energy costs and consumption, especially during peak demand, without compromising comfort.
- Increase management's ability to anticipate, prioritize, and schedule HVAC maintenance activities.
- Reduce overall operational costs associated with HVAC units being under-maintained.
- Meet greenhouse gas (GHG) emission reduction targets.
- Maintain comfort in different climate zones, such as in-store kitchens and hot food self-serve displays that generate heat plus typical cool refrigerated aisles.

ENCYCLE'S SWARM LOGIC SOLUTION

These three stores are all located in California, where outdoor temperatures often exceed 90°F and have different building sizes and cooling load capacities. Swarm Logic allows grocery store customers to attain savings of 10%-20% on energy costs, consumption, and emissions.

SWARM LOGIC RESULTS

For national food retailers with varying building sizes and cooling load capacities, Swarm Logic technology integrates seamlessly with existing building automation systems, enabling HVAC units to operate most efficiently in response to changing conditions such as outdoor temperature and building occupancy levels. Swarm Logic offers grocery store customers a scalable solution with significant benefits:

- Achieve a low cost of deployment.
- Realize an almost immediate financial payback period.
- Reduce peak electrical demand and energy consumption without affecting customer comfort.
- Allows micro-climates like kitchens to be assigned a higher priority.

Encycle also provides customers with access to additional tools including Swarm IQ for automated fault detection and Swarm Portal, a web-based platform that allows real-time visibility into operational performance of HVAC systems.

Swarm IQ identifies equipment issues early on to help mitigate the impacts of refrigeration systems having to work harder to compensate for under-performing units. This enables proactive, preventive maintenance practices, leading to improved enterprise asset management and energy efficiency.

	SUPER MARKET	GROCERY STORE	SPECIALTY FOOD
Building Size	78,000 ft ²	56,800 ft ²	31,075 ft ²
Cooling Load Capacity	171 Tons	72 Tons	44 Tons
Peak Demand Savings	94 kW	45 kW	25 kW
Consumption Savings	29,283 kWh	9,395 kWh	8,800 kWh
Consumption Reduction	14%	8%	13%
Energy Cost Savings	\$4,750	\$2,569	\$1,400
CO ₂ Reduction	22.9 tons	7.3 tons	6.9 tons



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