

Carpinteria Albertsons

All-natural Refrigeration System

In addition to meeting the Better Buildings Challenge of 20% Energy Reduction, SUPERVALU is also committed to developing a feasible all-natural supermarket refrigeration system for implementation across the industry.

The Carpinteria project demonstrates that an all-natural refrigeration solution can be designed and built for supermarket applications.

Carpinteria utilizes all categories of Natural Refrigerants:

- Ammonia (NH₃) as a Primary Refrigerant - outside
- Carbon Dioxide (CO₂) - inside store
- Propane (R290) in self-contained merchandisers
- Water is used to cool the NH₃
- Air is used to cool the Water

Through collaboration with the Department of Energy's National Renewable Energy Laboratory (NREL) and the Retail Energy Alliance Partnership we will be able to exactly quantify and compare the life-cycle energy use and emissions data for this all-natural solution as compared to current refrigeration technologies deployed in supermarkets.



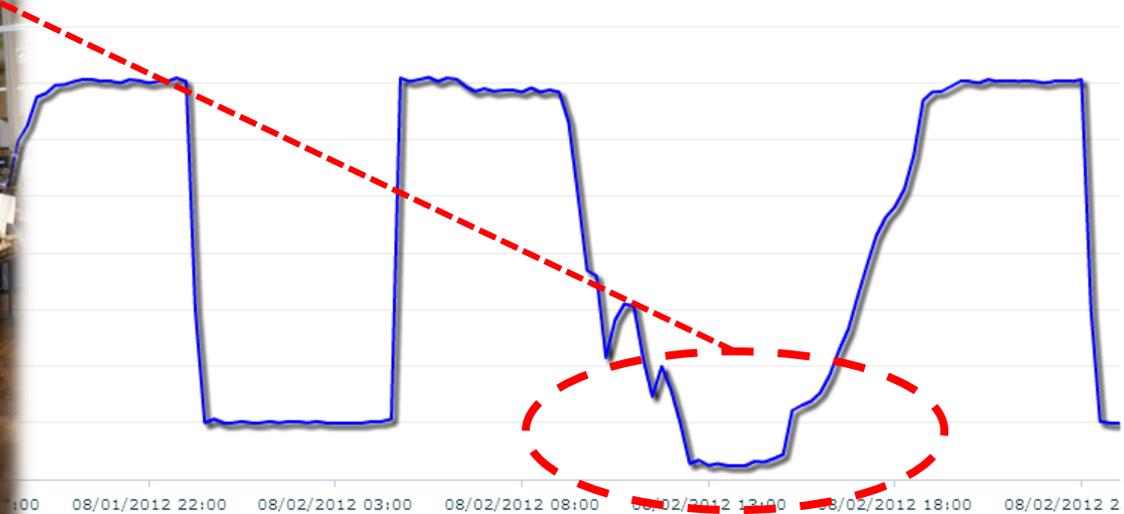
Daylight Harvesting with LEDs and Active Controls



This State-of-the-art Lighting system reduced the Lighting energy per square foot by 56%:

- All Lighting is LED technology
- Skylights have active damper controls
- The advanced controls system dynamically controls the skylight dampers and LED lighting levels to optimize store lighting while minimizing energy use.

Store # 6355 001EC6001910004 - Panel LP1-Sales Lights



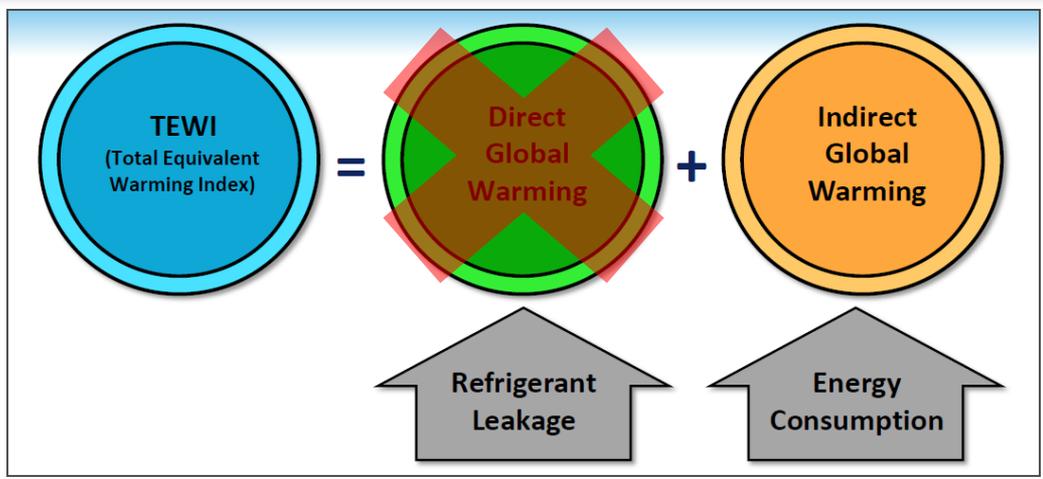
Kilowatt - Hours

US-PACIFIC - Interval - Fifteen Minutes

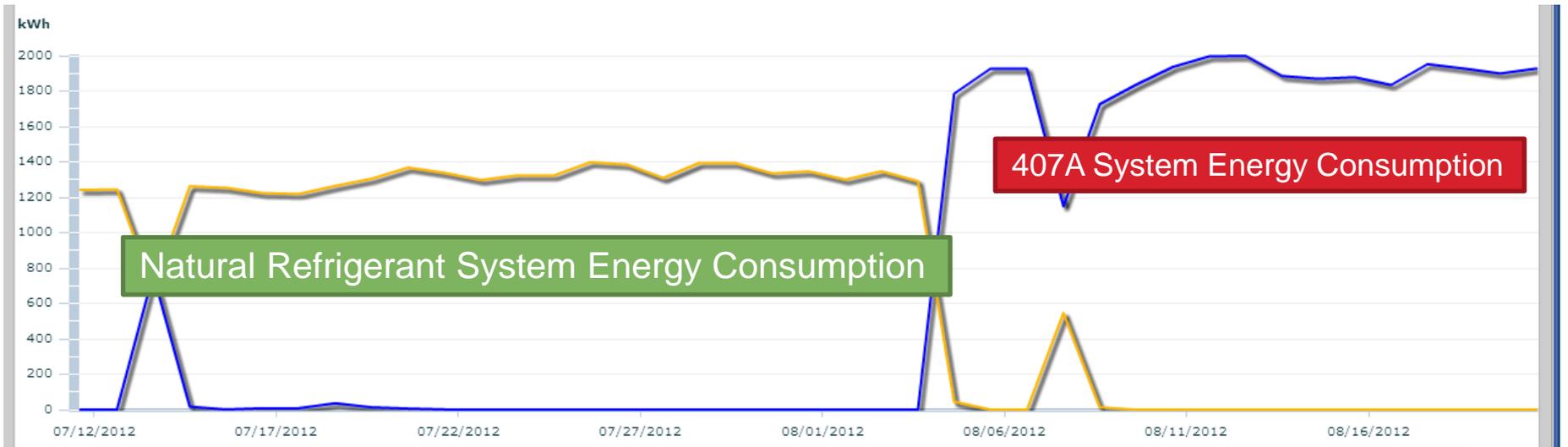
Store Ambient Lights are OFF

Sky Lights and Spot LEDs Provide 100% lighting needs

Use of All-natural Refrigerants Reduces TEWI both Directly and Indirectly



The all-natural refrigeration solution Deployed at the Carpinteria store Reduces the primary refrigeration energy by 32% per square foot And eliminates all Direct Emissions



This data is actual comparative data from the two systems installed at Carpinteria.