

"For the last three years, we've tried to participate in PG&E's Demand Response programs manually, but we were totally unsuccessful. Powerit's technology makes it easy."

Danny Vincent, Plant Manager, Guadalupe Cooling Company

Case Study: Guadalupe Cooling Company



Powerit's Financial & Environmental Impact:



52% of plant kW made available for demand response



ROI: Immediate compensation through utility DR incentive



Avoided the generation capacity to power 1,154 homes*



Equals generation capacity CO2 offset of 2,028 acres of fir tree forests

*Based on the US DOE Residential Energy Consumption Survey, 2003, and based on the definition of a single-family home.



Guadalupe Cooling Company is a produce precooling company that cools a full range of fruit and vegetable commodities including broccoli, lettuce, celery, cauliflower, mixed vegetables, strawberries, tomatoes, raspberries, blackberries, and feijoas using various processes. These processes include vacuum cooling, HydroVac™ cooling, pressure cooling, and icing. After cooling, Guadalupe Cooling stores the product in a cold room and then ships it out on line trucks to brokers or stores. In addition, Guadalupe Cooling processes baby white carrots, red carrots, conventional carrots, turnips, and beets, and ships produce that does not need to undergo cooling processes.

Guadalupe Cooling Company, Guadalupe, California

Initial Load Management Requirements:

- Pressure Coolers
- Evaporator VFDs
- Compressors
- Vacuum Pumps
- Ice Injectors
- Ice Makers

Powerit Solutions Installed:

- Energy Management Hardware and Software
- Konnekt™ Wireless IO
- Energy Sub-metering

A Powerful Need

Due to the complexity of the equipment being used in their facility, it is impossible for Guadalupe Cooling to control their energy usage manually. Alternatively, to reduce their electricity bill, they needed an energy management system that would control their energy usage automatically to take advantage of savings offered by state demand response programs without adversely affecting production numbers or the quality of their products. Plant Manager Danny Vincent comments, "For the last three years, we've tried to participate in PG&E's demand response programs manually, but we were totally unsuccessful." So, Powerit Solutions conducted an onsite energy assessment to develop a system design and determine a project cost for implementing an intelligent demand response system. Guadalupe qualified for DR incentives and signed up with an aggregator. Powerit's engineers installed the enabling technology and trained their employees.

A Powerful Solution

Powerit installed the system to integrate with Guadalupe Cooling's existing load controls to automatically shed loads within the plant during a demand response event. The system sheds the electrical load created by the compressors by reducing the number of pressure cooler fans running and the speed of evaporator fan VFDs, which also reduces the heat generated in the storage area by the fans. The system sheds additional load by delaying the vacuum pumps – and all associated motors – from starting their run cycle until the system predicts the average demand will not surpass the desired demand response setpoint. Additionally, the system stops the operation of ice injectors and ice makers as necessary during a demand response event, and operation resumes when the event ends. The company was very pleased to receive immediate compensation through utility incentives for the technology.

