

Project Details

Contract Type:

Engineer, Procure, Construct

Technology Type:

Automated Demand-Response

Facility Size: 2 sites

Peak Load:

6 MW demand at Visalia

1.1 MW demand at Artesia

7.1 MW of peak demand

Total load shed capacity:

3.3 MW

Project Summary

California Dairies wanted to take advantage of utility incentives to shed energy use during peak periods and save money. In order to understand and improve energy use at two plants, California Dairies sought the expertise of Ameresco, in conjunction with the local utility, Southern California Edison, to implement an automated demand response program (Auto-DR). California Dairies now has the ability to shed 3.3 MW of its load during peak periods and expects to save \$158,000 annually during the summer period.



Customer Benefits

California Dairies is the second largest dairy cooperative in the United States, co-owned by 460 California dairymen who have a vested interest in the operation and success of the cooperative's six plants. At the time, California Dairies could only rely on month-end utility data because there was no centralized system to measure electricity usage down to the subsystem level. Plant executives wanted to have a thorough overview of real-time electricity usage from each individual piece of equipment for a better understanding of their energy/production metrics.

To reduce energy costs and obtain a centralized view of real-time energy usage of dairy manufacturing equipment, California Dairies engaged the services of Ameresco to help implement an automated demand response (Auto-DR) program offered by Southern California Edison (SCE). Selected based on expertise in the dairy industry and its past success working with SCE on similar programs, Ameresco was able to guarantee that the full implementation cost of the system at the Visalia and Artesia plants would be covered by the SCE incentives.

Auto-DR enables customers with control systems, such as an energy management system (EMS), to reduce energy consumption during peak summer periods when requested by the utility. A low-cost energy reduction program sponsored by many utilities, Auto-DR offers manufacturers intelligent energy management strategies, and several of these programs cover as much as 100% of the installation costs with incentives up to \$300 per kW of verified load reduction.

As a result of the partnership, California Dairies was able to participate in the Auto-DR program, successfully shedding more than 3.3 MW of power demand, exceeding the load reduction targets specified by SCE, and providing California Dairies the potential to save \$158,000 during the summer period. Ameresco also provided a detailed understanding and centralized view of real-time energy consumption of their plant equipment down to the subsystem level.



CONTROL
Energy Usage

REPLACE
Inefficient Equipment

SHIFT
to Clean Energy

About California Dairies, Inc.

California Dairies, Inc. is the leading dairy cooperative in the leading dairy state, manufacturing fluid milk products, butter and milk powders. Shipping 17 billion pounds of milk annually with \$3 billion in worldwide sales, it produces 43% of California's milk and 9% of the milk in the United States.

Learn more at:

www.californiadairies.com.

About Ameresco

Ameresco, Inc. (NYSE:AMRC) is one of the leading energy efficiency and renewable energy services providers. Our energy experts deliver long-term customer value, environmental stewardship, and sustainability through energy efficiency services, alternative energy, supply management, and innovative facility renewal all with practical financial solutions. Ameresco and its predecessors have constructed billions in projects throughout North America.

For more information about Ameresco and our full-range of energy efficiency and renewable energy solutions, please visit www.ameresco.com.



Accolades

"We are very pleased with the Auto-DR system that Ameresco implemented. With Ameresco's technology and program management, the implementation was smooth and enabled us to exceed the load shed targets during the final test in the presence of a third party inspector. More importantly, we're now in a position to participate in future demand response events more consistently and manage our electrical demand more effectively."

Vice President of Engineering
California Dairies

Environmental Benefits

Auto-DR measures at California Dairies offer the ability to automatically curtail electric load when requested by SCE.

► 3.3 MW load shed during demand response events

In addition to minimizing the use of fossil fueled power plants to meet peak load requirements, this project helps reduce the need for the construction of new power plants.

Services Provided

Ameresco designed and implemented a comprehensive Auto-DR system in conjunction with SCE. The Visalia and Artesia plants were in need of an EMS to manage kW demand from evaporators and dryers, pasteurization process, refrigeration, compressed air, boilers and wastewater treatment equipment. Ameresco engineers initially gained a thorough understanding of how the equipment at California Dairies interacted in their production process; where raw milk is received from dairy farmers, pasteurized by heating it to 180°F and then cooled to 74°F. The cream is separated and processed into butter. The remaining milk solids are evaporated into powdered milk. Ameresco worked with SCE to deliver a combined audit and proposal for the Auto-DR system. Based on the benefits of obtaining real-time visibility and automated control over their equipment and energy use, California Dairies decided to proceed.

Ameresco utilized the existing control network to message and control all of the existing equipment and added power metering and advanced controls technology to California Dairies' existing process control systems, including the interface with SCE's Demand Response Automation Server (DRAS). Ameresco worked with SCE to implement and test the verified kW reduction and to secure all the approved financial incentives for California Dairies.

The new system enabled networked equipment to be remotely powered-down, based on pre-defined rules which would not affect production or critical equipment, upon receiving event or price signals from SCE via the Internet. Its flexibility allowed California Dairies to override signals and/or revise their load reduction strategy, giving them complete control of demand response participation levels.