

Food Industry Client

Food Manufacturing Facility

The Challenge

As one of the highest energy-consuming industries, food manufacturing has a golden opportunity to implement innovative power generating technology at its facilities. Increasing energy efficiency may put companies in the position to reduce costs and therefore, significantly improve their bottom lines.

For this reason, a major dairy products manufacturer in Mexico partnered with DTC Ecoenergía in 2019 to develop a new onsite cogeneration system at one of its large plants in Guadalajara, Jalisco, Mexico. DTC's team of energy experts conducted a thorough site evaluation and predicted the system would offset over 14,000,000 kWh purchased annually from La Comisión Federal de Electricidad (CFE), the regional utility.

The Solution

At the heart of the new system are two Capstone C1000 Microturbines engineered to cover 47% of the plant's electricity consumption and 33% of its billable demand. Capturing the waste heat from the microturbines, the system also generates hot air at 280°C (536°F) at a rate of 9.90 GJ/hr. The hot air proceeds through two World Energy Absorption Chillers, which produce chilled water at 5°C (41°F) at a maximum flow rate of 400 M3/hr. The new cogeneration system provides 97% of the facility's chilled water needs at an efficiency of 1.18 kWh / TR.

The Results

The microturbine-powered cogeneration system generates approximately 1,710,960 kWh of electrical power per month at 1,614 kW. As a result, less than 33% of the plant's energy comes from CFE. The reduction offers significant cost savings, which were realized within the first few months of operation.

At the time of the proposal, the projected return on investment was less than three years. With an internal rate of return of 36%, this new approach to energy generation and management will ultimately generate a savings of more than \$1.7 million pesos per month.

