

CASE STUDY



Asti Winery Green Commitment leads to Energy Management



“We couldn’t be happier with the results. We’re seeing significant energy savings and reduced costs across the board. In fact, we’re currently planning another expansion project and we expect to leverage the same PG&E programs and solutions.”

Jeff Collins
General Manager
Asti Winery

THE CHALLENGE

When Asti Winery decided on a new expansion project, they expected it to be a challenge integrating their green corporate mission into the successful completion of the project. What they didn’t expect was how Pacific Gas and Electric Company (PG&E) would help.

Founded in 1881 and still partly housed in the original historic building, Sonoma County’s Asti Winery has long been at the forefront of the green movement in the wine industry and was one of the first California wineries to earn green certification. Respecting both history and environmental sustainability were key objectives for Asti’s owner, Foster’s Wine Estates, in the planning and construction of a new project in 2006. To produce wines under the venerable Souverain brand it had previously acquired, the vineyard built a winery-within-a-winery — a modern high-tech facility inside a 120-year-old structure designated as a state historic landmark.

THE PG&E SOLUTIONS

With the help of PG&E, Asti Winery found solutions to its challenges in the Savings By Design program, a statewide utility-administered initiative that supports energy-efficient commercial, industrial, and agricultural construction and design. PG&E’s team presented Asti with an array of insulation, lighting and compressor efficiency recommendations to minimize energy consumption.

“We were focused on finding and implementing these measures, but our PG&E account manager, Jim Salomone, put all these opportunities into one package for us and showed us exactly where we would qualify for rebates and how much energy we would save at each step,” said Jeff Collins, General Manager of Asti Winery. “By addressing these challenges right from the beginning of the design process, we were able to establish the business case for these measures and do the right thing without going out to locate parts and pieces on our own.”

Wine Tank Insulation

Refrigeration is usually the largest energy user in a winery, with more needed during hot summer days when energy prices are typically at their highest. The cornerstone of the Asti energy-management strategy was the insulation of the new winery’s stainless steel wine tanks. Tank insulation helps the winery maintain constant optimum temperatures – and lower temperatures more quickly when necessary – while maximizing refrigeration efficiency and controlling energy costs.

Proper insulation enables the winery to cut energy use in the peak demand season, which yields significant cost benefits. When electricity demand occasionally peaks in the summer, PG&E may call “Demand Response events.” During these events, participating customers can curtail their energy usage to earn incentives. Asti is now able to turn off refrigeration for several hours during Demand Response events, which not only delivers immediate cost savings but makes the company eligible for Demand Response rewards. And tank temperatures remain stable within a degree or two.

The Business Case

A business case had to be made for a substantial capital outlay to complete the insulation project. Asti’s plan was to insulate 84 tanks of various sizes ranging from 12,000 gallons down to 1500, requiring a total of about 32,000 square feet of insulation at an industry-estimated cost of \$11 per square foot. PG&E’s pre-project analysis estimated that wine tank insulation could produce large annual electric and demand savings as well as significant energy cost reductions. The insulation project alone qualified the company for an incentive large enough that the decision to move ahead with the project, according to Collins, was not a difficult one.





ASTI WINERY PROJECT RESULTS

Simple payback, combined lighting, fans and compressors: 1.2 years

Simple payback, wine tank insulation: 3 years

\$165,325 PG&E incentives

1,224,191 annual kWh savings

463 kW demand response capacity

Lighting and Compressors

Asti's additional energy management initiatives included lighting, automated compressors and fans. The new winery features an energy-efficient lighting system equipped with motion sensors to ensure that the lights are on only when necessary. The winery is designed to take maximum advantage of natural daylight – particularly in the stainless tank area and the barrel room, where Collins says artificial lighting is virtually unnecessary during the day.

The compressors for the cooling system are driven by energy efficient motors which are controlled by computer – they automatically ramp up and ramp down to complement each other and ensure that no single compressor is overburdened, saving power and wear and tear on the equipment. Variable speed drives on condenser fans, evaporator fan cycling, floating head pressure and floating suction pressure are other measures Asti's system incorporates to reduce energy demands.

THE BOTTOM LINE

All told, Asti's new winery-within-a-winery covers nearly 100,000 square feet and includes 93 wine storage tanks in addition to the cold storage facility. Upon installation and completion of the project, the analysis estimated the total combined annual electricity savings of 1,224,191 kilowatt hours, enough to supply 177 homes for a year, and 462.5 kilowatts in demand savings. The company also earned incentives from PG&E of \$165,325. Simple payback for the wine tank insulation measure was 3 years, but with the PG&E incentives factored in was reduced to 1.9 years. Similarly, the combined lighting, fan and compressors measures simple payback time was 1.2 years and with the PG&E rebate included, the adjusted payback time was only 5 months.

THE LAST WORD

"We couldn't be happier with the results," said Collins. "We're seeing significant energy savings and reduced costs across the board. In fact, we're currently planning another expansion project and we expect to leverage the same PG&E programs and solutions."

"Of course this project had to make sense from a business perspective, but the most positive aspect for us has been the knowledge that we did the right thing," said Collins.

"We've developed something that's sustainable, environmentally sound and good for business, which has borne out our company's vision. At every step along the way, PG&E's knowledge, financial support and commitment to excellence were crucial to the eventual success of the project. And PG&E continues to make us aware of new offerings such as sustainability workshops that present new techniques for ongoing energy management." On the horizon for Asti Winery and PG&E is a new solar generation project with a generation capacity of 466 kW. The project is on schedule to be completed by December 2008.

YOUR NEXT STEPS

To learn more about PG&E's energy audits, technical assistance and energy management incentives for wineries, call your account representative or the **PG&E Business Customer Service Center** at **1-800-468-4743**, or visit www.pge.com/agfood.



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