

Vineyard 29 Napa Valley, California

Located in picturesque St. Helena, Vineyard 29 has pioneered trigeneration utilizing Capstone microturbines, as a viable and economical solution to winemaking since 2003.

Owner Chuck McMinn installed two Capstone C60 Microturbines in an effort to achieve an economic and environmental efficiency to his winemaking production and operation. These two turbines produce a maximum of 120kW of power for Vineyard 29's, wine production, heating and cooling of its manufacturing facilities and caves. Continuous power is critical for this type of operation since power loads are cyclical, and seasonal 'crush' outages can be costly and unpredictable for operations.

Low pressure natural gas is used within the Vineyard 29 system for the two C60's. This trigeneration facility works with triple efficiency by capturing waste heat and utilizing it for processing of grapes, heating the facility, and cooling the facility through a 20-ton absorption chiller.

Fluctuation of power load, as well as the frequency of seasonal outages were another incentive to installing the microturbines. Many wineries located in remote locations have to deal with the insecurity of power outages, as many as four to eight times a year. Capstone's dual mode microturbines ensure backup power to the Vineyard 29 facility in the event of an outage. This power security is a valuable incentive that recovers loss of profit and production otherwise impacting the vineyard during its most critical operations.

Vineyard 29 has seen a combined cooling, heating, and power (CCHP) energy efficiency of 64 percent with utility and 83 percent internal, creating a compelling conservation benefit to this application. Reduction of green house gas as well as environmental stewardship were a part of the decision to transition operation to a CCHP facility. Many facilities will see a 30–40 percent savings in operational costs, making Capstone Microturbines a viable option for a state that ranks second in the world in wine production. ■



Capstone microturbines generate electricity, cooling, and heating at Vineyard 29 in Napa Valley, California.

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