



## Highlight of the Month: Assessing and Reducing Energy Needs

Using energy efficiently in buildings and facilities, production processes and transportation can reduce costs, conserve resources, enhance image, and improve the environment.

### Conserving Energy with Night Operations at Golden State Vintners

California's energy crisis of 2001 provided the incentive for businesses statewide to reassess and reduce their power usage. Winegrowers were faced with possible energy blackouts during the critical harvest time when incoming winegrapes needed immediate processing because of their perishable nature. Fortunately, large-scale power outages never became a reality, but many wineries such as Golden State Vintners stepped up their energy conservation practices and have continued to use these measures.

One of the most dramatic changes for Golden State was their conversion of all harvesting and juice processing activities to nighttime operations so that the processing shift could curtail use during peak demand times.

During harvest, hundreds of employees at the winery's six locations work the night shift to bring in the grapes and drain and press them for the company's 200,000-ton operation. The day and afternoon shift sanitizes the equipment in preparation

much higher wine quality," says Jon Powell, vice president of operations. "We avoid using costly power consumption during the peak demand cycle to remove the ambient heat load accumulated from fruit traditionally picked, transported and processed

and its juice are cool, fresh and easier to work with. We're far less likely to have grapes that have started a wild fermentation from those harsh conditions. The benefits of night harvesting and processing far outweigh the minimal inconvenience."

Powell says they also examined their refrigeration systems across the company and made upgrades and equipment tune-ups. The reconfiguration of their process controls and load balancing eliminated large fluctuations in energy use due to equipment inefficiencies. The controls conserve energy by automatically balancing the refrigeration system sequencing activities.

Golden State tightened up their operations, paying close attention to repairing air and water leaks in pipes, hoses and valves in the wineries. These small savings across several locations added up to big savings. The air compressors run less due to atmospheric loss from leaks. The wells pump less due to conservation in the



Temperature-controlled fans draw the cool air into Golden State's new barrel aging warehouse and distribution center in Napa, as General Manager Michel Blom checks on the energy-saving cooling system.

for the next night's receipt of grapes. "We not only realize significant energy conservation measures from night processing, we also achieve

during the day. Removing this huge ambient heat load, representing millions of BTUs, is costly to deal with and degrades wine quality. Today our fruit

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Please share this newsletter with your entire staff. It is also available online in pdf format on Wine Institute's web site at: [www.wineinstitute.org/communications/highlight/EnergyEfficiencyAug2002.pdf](http://www.wineinstitute.org/communications/highlight/EnergyEfficiencyAug2002.pdf)

**Benefits of Energy Efficiency:**

- ⌘ Reduces direct operational costs
- ⌘ Increases resource efficiency
- ⌘ May give winery bargaining power to negotiate with utility companies by reducing energy consumption or shifting a portion of the use to an off-peak period
- ⌘ May gain rebates from utility companies for installing certain energy-efficient equipment
- ⌘ Improves worker productivity through natural daylighting and other environmental measures, according to a Rocky Mountain Institute study
- ⌘ The use of less energy helps prevent pollution through reduced burning of fossil fuels
- ⌘ Builds a positive image for the wine-grower through responsible use of limited resources (Information on benefits is partially drawn from a white paper from the Business for Social Responsibility.)

**Potential Trade-Offs:**

- ⌘ May take longer to complete specific tasks
- ⌘ May require a higher initial investment
- ⌘ May require employee and delivery schedule changes to accommodate an evening crush

wineries where recycling translates into less water going into the treatment systems, further saving on pumping and treatment charges.

“The energy crisis forced California and all of its industry to look at conservation and usage. We’re all more aware of how to save energy and

contain cost in our operations, and we encourage our entire staff to carry their heightened awareness to their energy use at home,” says Powell.

**“Green Building” Saves Energy at Sanford Winery & Vineyards**

Last year in the Santa Rita Hills of Santa Barbara County, vintner Richard Sanford finished building a new mission-style winery constructed of adobe bricks, recycled timbers, indigenous stone and roof tiles of red clay. Considered a “green building” because of its use of reclaimed and local resources, the adobe winery has saved considerable energy and protected the environment by virtue of its construction with on-site materials.

But beyond a beautiful design that reflects Feng Shui principles and the Sanfords’ passionate environmentalism, the adobe facility of earth bricks also saves power with its high-quality

thermal efficient walls. The high heat storage capacity of adobe means that the winery can be kept cool in the summer and warm in the winter, requiring less need for heating and cooling for production of the winery’s 50,000 cases of Pinot Noir and Chardonnay.

Energy conservation measures have also been established in other areas of the winery and vineyards. Open top fermenters can be kept outside because the tanks are insulated and under a poll barn structure. The open-air facility doesn’t require power fans to evacuate the CO2 emissions after fermentation.

In the aging cellars, Sanford makes full use of

ambient temperatures for cooling. The winery, only 24 miles from the Pacific Ocean in the Santa Inez Valley, experiences chilly marine breezes every evening. When it is cooler outside the barrel room, a thermocouple will automatically turn fans on to draw the night air into the facility.

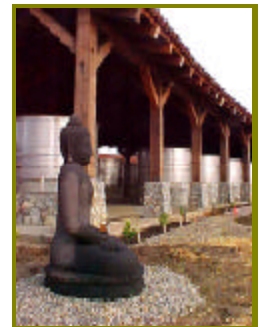
Other efficiencies are the winery’s gravity flow system for the gentle handling and racking of the wine and movement of the winery’s water supply. To eliminate using propane, Sanford has installed an EPA-approved wood-fired boiler to heat process water. In the organic vineyards, he uses grass cover crops to avoid tractor passes for the disking of

Photo courtesy Sanford Winery & Vineyards



Above: Sanford Winery & Vineyards is constructed of thermal efficient adobe bricks to stay cooler in the summer and warmer in the winter.

Photo courtesy Pacific Post & Beam



Above: The open-air fermentation facility at Sanford requires no power-run fans to disperse CO2 emissions.

weeds, as well as to build soil fertility and provide beneficial insect habitat.

Saving energy has direct cost savings, but for

Sanford, conserving resources is his way of working harmoniously with nature. "As a farmer, you gain a spiritual

connection with nature. We all have a responsibility to the environment, as well as to each other and our children," he says.

### Benziger Audit Helps Improve Energy Efficiency

Mike Benziger and his family are committed to preserving the environment as much as they are passionate about their winemaking at the 170,000-case Benziger Family Winery in Glen Ellen. Therefore, when a capable Sonoma State University student approached them to do an energy audit on the winery for her class thesis, the family wholeheartedly cooperated to increase their energy conservation measures.

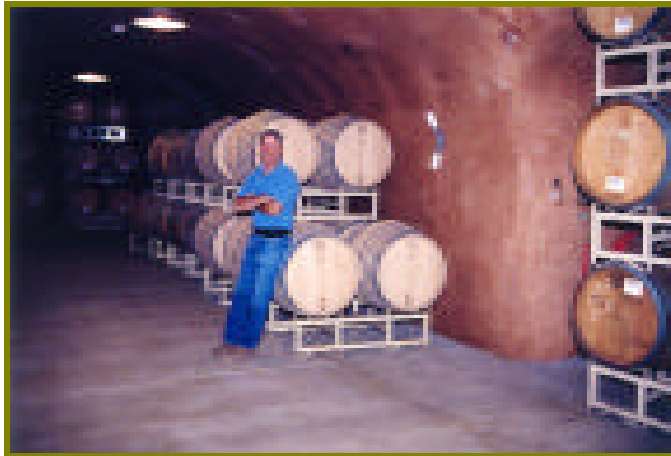
The audit assessed power use throughout the winery and vineyards, which included the buildings, motors, drives and pumps, refrigeration, lighting, furnace fans, tank cooling and heating, and the HVAC system.

"The results of the audit recommended what could be done and helped us set a goal of reducing kilowatt use by 20 percent for the entire winery and vineyards," says Matt Atkinson, ranch manager at Benziger.

The first project was changing the winery's lighting from an incandescent to fluorescent system. This was the "low-hanging fruit" that easily reduced power use for lighting by 20-25 percent, explained Atkinson. The winery participated in PG&E's rebate program to receive

help with installation costs and found the [www.pge.com](http://www.pge.com) web site useful for conservation information. The rebate

volts to a more efficient 480 volts. Benziger rewired the crush pad and installed variable speed motors. They applied foam



Ranch Manager Matt Atkinson shows the new caves, which the Benziger family chose to use to save energy and costs for temperature and humidity control in the aging of their wines.

program, the 2002 Express Efficiency Lighting Application, helps small- and medium-sized businesses. (See resources box.)

Perhaps the largest project was Benziger's recently completed cave excavation at Glen Ellen for barrel aging. The energy audit revealed that caves would be more economical in the long run for their winery needs than building a warehouse, considering that no power would be required for humidity control and chilling.

Other changes included converting the winery's electrical service from 240

insulation to fermentation and storage tanks as well as on the roof of their barrel barn to lower cooling costs. Computers control the chillers to respond more effectively to load fluctuations in the refrigeration. Benziger is also in the process of switching to biodiesel fuel for all diesel equipment and working to convert oxygenators at their water settlement ponds to solar power.

"All the small efforts add up," says Atkinson. "We have ongoing updates with our staff to conserve energy, and we encourage them to take these practices home."

#### Resources:

- ⌘ **Pacific, Gas & Electric.** Cash rebate program for small- and medium-sized businesses that conserve energy with specific lighting installations. [www.pge.com](http://www.pge.com). 1-800/468-4743.
- ⌘ **Business for Social Responsibility.** A white paper describing business importance of energy efficiency, implementation steps and links to helping resources. [www.bsr.org/BSRResources/WhitePaperDetail.cfm?DocumentID=401](http://www.bsr.org/BSRResources/WhitePaperDetail.cfm?DocumentID=401)
- ⌘ **California Energy Commission.** Links to efficiency information on lighting, appliances and more. [www.energy.ca.gov/efficiency](http://www.energy.ca.gov/efficiency)
- ⌘ **U.S. Dept. of Energy.** Comprehensive resource for energy efficiency and renewable energy. [www.eren.doe.gov](http://www.eren.doe.gov)
- ⌘ **U.S. Dept. of Energy Office of Industrial Technology: Agricultural Energy Best Practices.** Information on efficiency through new technology implementation, plant assessments, and system improvements. [www.oit.doe.gov/agriculture/bp.shtml](http://www.oit.doe.gov/agriculture/bp.shtml)
- ⌘ **ConeTech, Inc.** Providers of tank insulation consisting of polystyrene foam sheath with external aluminum skin, reducing power usage 97.5% vs. non-insulated tanks. [www.conetech.com](http://www.conetech.com). 707/829-6200
- ⌘ **Green Building** <http://oikos.com/index.lasso>



# THE CODE OF SUSTAINABLE WINEGROWING PRACTICES



In early 2001, leadership and funding from Wine Institute and the California Association of Winegrape Growers (CAWG) led to the formation of a committee to develop a “Code of Sustainable Winegrowing Practices.” This proposed voluntary program, establishing statewide guidelines for sustainable farming and winemaking, is nearly complete and is expected to be introduced to the wine community this fall.

**Purpose:** The purpose of the project is to enhance the California wine industry’s leadership role in responding to pressures resulting from population growth, public and legislative attitudes, environmental decisions from regulatory and governmental bodies, and other growth-related issues. The new Code, and its implementation, can greatly augment the industry’s collective and unified ability to accommodate these pressures, while assuring that future generations can produce the finest world-class wines. The goal of the Code is to “promote farming and winemaking practices that are sensitive to the environment, responsive to the needs and interests of society-at-large, and economically feasible in practice.” In a recent address to Wine Institute’s Board of Directors John De Luca characterized the proposed Code as “most likely the greatest legacy we can create for the wine community, our larger society, and generations yet unborn.”

**Project Summary:** More than 50 Wine Institute and CAWG members, as well as outside stakeholders such as representatives from Cal/EPA and independent farm advisors, sit on the committee spearheading the project. Committee Chair Michael Honig leads work on this first-ever statewide initiative, which will include a system to measure the voluntary industry input from vineyards and wineries. The data collected from the project will be used to benchmark the wine community’s progress on sustainability and target educational campaigns where needed. The winegrowing portion of the guide book will build upon the successful programs of the Lodi-Woodbridge Winegrape Commission and the Central Coast Vineyard Team. Feedback from regional grower and vintner associations and a wide range of academia, environmental and social equity communities has played an important role in the Code development. Dr. Jeff Dlott of RealToolbox, a sustainable agriculture and resource conservation consulting firm, has been contracted to help oversee the project and measurement system.

**Next Steps:** At Wine Institute’s June 2002 Annual Meeting of Members, the Institute Board of Directors provided comment and approved a complete 490-page draft of guidelines for the Code of Sustainable Winegrowing Practices. The committee and Institute staff have also obtained outside comment of the approved draft by environmental and social equity groups, university educators, regulators and other industry experts.

To attract additional implementation funds for this project, the Wine Institute Board has established a 501(c)3 nonprofit, non-lobbying foundation in conjunction with the California Association of Winegrape Growers. This was necessary as many philanthropic organizations donate solely to 501(c)3 groups. Named the California Sustainable Winegrowing Alliance, this entity will help advance the adoption of sustainable viticulture and winemaking practices through research and education. Bylaws have been approved and a board of trustees has been appointed by both Wine Institute and CAWG. For more information on the project, go online to [www.wineinstitute.org/communications/SustainablePractices/vision.htm](http://www.wineinstitute.org/communications/SustainablePractices/vision.htm) or call the Communications Department at 415/356-7520.

## Upcoming topics for “Highlight of the Month” publications are as follows:

✂ ✂ September – “Composting” \* ✂ October – “Controlling Erosion” \*

✂ November – “Protecting Air and Water Quality”

✂ December – “Attracting and Retaining Good People”

✂ Topics of a seasonal nature are matched to the time of year when the practice takes place.

The practices of “Assessing and Reducing Energy Needs,” highlighted in this issue, pertain to the Code of Sustainable Winegrowing Practices in the following areas: Soil Management; Winery Water Conservation and Water Quality; Material Handling; Environmentally Preferred Purchasing.

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