

# Power Woes for California Wineries

But Advice and Financial Aid Plentiful

by [Mick Winter](#)

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Note: This is the first of two articles on energy, and discusses programs and measures immediately available to wineries and growers, primarily in California. The second will describe long-term efforts being made by wineries throughout the world to use alternative forms of energy.

California wineries and growers can no longer depend on reliable electrical power, and other states are not far behind. Arizona faces possible blackouts this summer, New York has been mentioned as a potential energy casualty, and the Northwestern states face hydroelectric power shortages due to a dry winter. While much of the information provided here on programs is specific to California, the energy-saving tips are of value no matter where you are located.

No industry likes to contemplate losing power but few are as dependent upon timing as wineries. At harvest time, a time ultimately determined by the grapes themselves and not by the market or outside suppliers, it is essential that equipment not only be operating, but be operating one hundred percent reliably. Crusher-destemmers, fermentation tanks, pumps and cooling systems must all be fully powered. Unlike some industries, wineries don't do well with delays and don't get second chances.

As of this time, no winery in California that is a customer of **Pacific Gas & Electric**, **San Diego Gas & Electric**, or **Southern California Edison**, or of many smaller utility companies, can be assured that its power will not be interrupted over the hot months of summer and early fall. However, California's Governor **Gray Davis** and the state legislature have initiated a number of measures that can help wineries and growers.

During the previous twelve years, the state built no new power plants. Over the last two years, the state has licensed 16 major new plants for 10,403 megawatts, and another eight are in the pipeline. The first four of these new plants will be going online this summer, producing 1,829 megawatts, the equivalent of the power needed to serve over 1.8 million homes.

Nevertheless, it won't be enough, and the state is busy urging its residents and businesses to use power more efficiently. In April, the state legislature passed, and the governor signed, an \$800 million energy bill that includes \$275 million in incentives for businesses, of which \$65 million is specifically allocated for agriculture. Programs include:

- \$10 million for the purchase and installation of advanced metering and telemetry equipment for agricultural and water pumping customers to improve load management and demand responsiveness techniques.
- \$10 million for the California Agricultural Pump Energy Program to facilitate the efficiency testing of existing agricultural water pumps, and to provide incentives for the retrofitting of pumps as necessary.
- \$45 million to encourage the purchase of high efficiency electrical agricultural equipment, and incentives for overall electricity conservation efforts. Eligible equipment includes lighting, refrigeration, or cold storage equipment.

In addition, the wine industry can benefit from incentives that are available to any small business. These include:

- Retrofitting commercial buildings with high efficiency lighting systems.
- Improving demand responsiveness in heating, ventilation, air-conditioning, and lighting in buildings.
- Use of low-energy building materials and other measures to lower air-conditioning usage.
- Loan guarantees from the California Technology, Trade and Commerce Agency that assist businesses in securing loans to purchase renewable energy systems.

- Installation of time-of-use metering if using more than 200kW of energy.

## **Agricultural Peak Load Reduction Program**

**Eligibility:** The California Energy Commission, in partnership with the California State University, Fresno, is offering financial incentives and technical services to the agricultural industry to reduce electricity use during summer peak hours.

The following projects are eligible for funds:

The purchase and installation of high-efficiency electrical agricultural equipment and other equipment or any facility installed to achieve peak period electricity reduction. Projects installed on or after January 1, 2001 can qualify for funding. Eligible projects include: refrigeration and other cold storage equipment, pumps and premium motors, and automated control systems.

The testing of agricultural water pumps, and retrofitting or replacing pumps and premium efficiency motors to increase efficiency.

The purchase and installation of advanced metering and telemetry equipment for agricultural and water pumping customers to improve load management and use demand responsiveness techniques. This includes irrigation scheduling systems.

Offsetting the costs of retrofitting existing natural gas powered equipment to burn alternative fuels, including, but not limited to, in-state produced "non-spec" or "off-spec" natural gas.

Eligible projects must demonstrate that electricity load will be shifted or reduced between 12 p.m. and 6 p.m. Monday through Friday, except holidays, for the months of June through September.

**How to Apply:** For application forms or further information, go to [www.energy.ca.gov/ag](http://www.energy.ca.gov/ag) or contact the **Fresno State Center for Irrigation Technology:** tel: (866) 297-3029, fax: (559) 278-6033, or email: [pcanessa@csufresno.edu](mailto:pcanessa@csufresno.edu).

## **California Energy Efficiency Programs**

**Low-Energy Usage Building Materials:** California's commercial buildings account for 36 percent of the state's annual electricity use. During peak times, commercial buildings use 11 percent of the state's electricity for lighting and 15 percent for air conditioning. Funds will be used to identify and buy-down the cost of energy measures, such as "white roofs" used to retrofit commercial buildings for energy efficiency.

**Small Business Standard Performance Contract Program:** Focuses on small businesses with peak demands less than 500 kW per month, and also offers financial incentives for equipment replacement after energy savings are verified.

**Express Efficiency Program:** Offers prescribed rebates for specific energy efficiency measures to small businesses with peak demands less than 500 kW. Rebates are available for lighting, air conditioning, refrigeration, food service, and agricultural efficiency measures. Rebates for specific equipment are paid up front and only require a simple application process.

**Innovative Peak Load Reduction:** Takes full advantage of the innovations of the private sector to generate innovative solutions to reduce peak demand. Grants will be awarded to businesses for efficiency projects including, but not limited to, lighting and cooling efficiency improvements, solar cooling, building energy management controls, electric generation from landfill gas and solar systems.

For all of the above energy efficiency programs, contact **Scott Matthews, California Energy Commission** (800) 555-7794. More information at: [www.energy.ca.gov/peakload/](http://www.energy.ca.gov/peakload/).

## **Additional Information**

The California Energy Commission offers helpful guides for agriculture at [www.consumerenergycenter.org/flex/agriculture.html](http://www.consumerenergycenter.org/flex/agriculture.html). You can also find these and other excellent information on the California Farm Bureau Federation's "Agriculture and the Energy Crisis" on-line page at [www.cfbf.com/issues/energy/](http://www.cfbf.com/issues/energy/). The site also has links to other energy-saving information.

**California Technology,  
Trade & Commerce Agency:**

(916) 445-9699  
[www.commerce.ca.gov](http://www.commerce.ca.gov)

**Flex Your Power:**  
[www.flexyourpower.ca.gov](http://www.flexyourpower.ca.gov)

**Consumer Energy Center:**  
[www.consumerenergycenter.org](http://www.consumerenergycenter.org)

**Rebates:** For all California Energy Efficiency Rebate Programs call the California Energy Commission: (800) 232-4685 or (800) 555-7794

**Business Energy Help Line:** Do you have business energy conservation questions? Contact the Business Energy Help Line sponsored by the California Technology, Trade and Commerce Agency. Call (916) 445-9699 between the hours of 8:00 a.m.--5:00 p.m., Monday-Friday.

**Technology, Trade and Commerce Agency**  
Business Best Practices Website:  
[www.commerce.ca.gov/energy/bestpractices.html](http://www.commerce.ca.gov/energy/bestpractices.html)

Warm Weather Tips for Business:  
[www.commerce.ca.gov/energy/wweather-tips.html](http://www.commerce.ca.gov/energy/wweather-tips.html)

Energy Efficiency Tips:  
[www.commerce.ca.gov/energy/energy-tips.html](http://www.commerce.ca.gov/energy/energy-tips.html)

**U.S. Department of Energy**  
Status of the California Energy Situation: [www.eia.doe.gov/cneaf/electricity/california/california.html](http://www.eia.doe.gov/cneaf/electricity/california/california.html)

**California ISO**  
Current System Conditions:  
[www.caiso.com/SystemStatus.html](http://www.caiso.com/SystemStatus.html)

## **Utilities**

**Southern California Edison**  
Business Solutions:  
(800) 736-4777  
[www.sce.com/bus\\_sols/](http://www.sce.com/bus_sols/)

**Pacific Gas & Electric**  
Energy and Money-Saving  
for Business:  
(800) 468-4743  
[www.pge.com/003\\_save\\_energy/003b-bus/](http://www.pge.com/003_save_energy/003b-bus/)

**San Diego Gas & Electric**  
Energy Efficiency Center  
(800) 411-SDGE  
[www.sdge.com/efficiency/](http://www.sdge.com/efficiency/)

## **Energy-saving Tips/Preparation for Power Interruptions**

*Supplied by the California Energy Commission and prepared by Jim Thompson, University of California, Extension Specialist.*

Electricity interruptions will most likely occur during on-peak hours, from noon to 6:00 p.m., and could last for one to two hours. There is a high likelihood of being interrupted several days in a month during the summer of 2001.

## **On-Farm Irrigation**

Test your well pumps and improve overall pumping plant efficiency--that is, the combined efficiency of the pump and motor or engine.

For pumps between 55 percent and 60 percent efficiency, consider adjusting the impeller.

For pumps between 50 percent and 55 percent efficiency, consider adjusting the impeller first; consider repairing or replacing the pump if adjusting the impeller has no effect on efficiency.

Consider repairing or replacing pumps with less than 50 percent efficiency.

When replacing standard motors, buy new energy efficient electric motors.

Reduce the total dynamic head of pumps (power consumption) by installing variable speed drive controllers. These systems work best in Time-of-Use rate schedules on deep wells with frequent startups.

Use energy efficient water-conserving irrigation practices. Adopt irrigation scheduling methods and deficit irrigation practices to conserve water.

Sign for Time-of-Use rate schedules with the utility company. By using Time-of-Use schedules, you can reduce total costs and possibly avoid power interruptions. The likelihood of power interruptions occurring during peak times is higher than during off-peak times. By already being prepared to use power off-peak, it is possible to avoid interruptions.

Calculate if your current pump and irrigation system can deliver, in 18 rather than 24 hours, the water your crops need.

If you need to make changes to the pump and/or the irrigation system, calculate the cost and figure out how to implement the project. Talk with the utility company about financing options.

Adjust your work schedule to meet the new Time-of-Use hours.

For additional information on pumping equipment, purchase the University of California, Davis "Irrigation Pumping Plants" publication, at (530) 752-1130

## **In the Vineyard, Packing Shed or Loading Pad**

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Reduce the total dynamic head of pumps (power consumption) by installing variable speed drive controllers. These systems work best in Time-of-Use rate schedules on deep wells with frequent startups.

Call your utility company and sign-up for a Time-of-Use (TOU) rate schedule that works for you.

Adjust your work schedule to meet the new Time-of-Use hours.

## **In the Cellar and Warehouse**

Reduce the effective wall or roof temperatures by painting south facing walls and roof with light color materials.

Reduce fan and lighting use, increase insulation and seal openings.

Install extra heatexchange surface for the condenser, in order to further reduce refrigerant condensing temperature.

Make sure the temperature of the refrigerant fluid after it is cooled in the condenser is as low as possible.

Select evaporative condensers over air-cooled units.

Maintain highest possible suction pressure to reduce compressor energy use.

## **Planning for a Rolling Blackout**

Try to work off-peak. Start early to finish work before noon or work after the potential rolling blackout period and finish after midnight, if the produce can handle cooling delays.

If cooling delays and work interruptions are not tolerable, install the cleanest air quality backup generators to operate during the rolling blackout.

For more detail on how to implement these recommendations, please download the Adobe Acrobat PDF file at <http://postharvest.ucdavis.edu>.

## **Easy Energy-Saving Tips**

Businesses can address the need for energy efficiency in various ways. Fortunately, many of them can also help improve your bottom line. However, the need for action is immediate, so here are some important steps you can take right away:

Minimize energy usage during the peak demand hours of 5 a.m. to 9 a.m., and 4 p.m. to 7 p.m.

Irrigate during non-peak hours, if possible. Irrigators can produce the most savings since seventy percent of all agricultural electrical consumption involves irrigation.

For heating, lower your thermostat by at least two degrees to 68 or less. For each 1 degree you'll save up to 5 percent on your heating costs.

For cooling, keep thermostats set at 78 degrees (or higher), close blinds and curtains during the day, use fans rather than air conditioners,

Turn off unneeded lights and equipment, especially in unused offices and conference rooms. Turn down other lighting when possible. Replace incandescent bulbs with compact (and now sub-compact) fluorescent bulbs.

Turn computers, copiers and other office equipment to low-power standby mode. Turn equipment off at the end of the workday.

The amount of energy that various models of printers use varies widely. Make sure your printer is an energy efficient model.

Buy ENERGY STAR equipment and lights.

## **Product Rebates**

California's Energy Efficiency and Demand Reduction Program makes hundreds of millions of dollars available through utility companies and state agencies to reduce electricity use. The program's database lists a wide variety of products and programs. Find it at [www.consumerenergycenter.org/rebate/](http://www.consumerenergycenter.org/rebate/).

## **20/20 Energy Rebate**

Residential, commercial and industrial customers are eligible for this voluntary program, which will provide rebates to customers who reduce their summer 2001 electricity usage. Customers will receive a 20 percent rebate on their summer electric bill if they cut back their electricity use by 20 percent over last summer's level. **wbm**