



AESAP
AGRICULTURE ENERGY
SAVINGS ACTION PLAN



GRAPE TO BOTTLE



**Energy efficiency rebates
for vineyards and wineries
at every stage**



From irrigating the vineyard and harvesting grapes, to bottling the wine and treating wastewater—there are unique opportunities for agriculture business owners to lower utility bills and increase profit margins.

The **Agriculture Energy Saving Action Plan (AESAP)** offers **cash rebates and financial incentives** at every stage of the winemaking production process to help you improve operations and lower costs. Thinking holistically about energy efficiency across your winemaking operation will maximize your rebate opportunities and long-term energy savings.

AT THE VINEYARD

High efficiency pumps and variable frequency drives (VFDs) save energy and help conserve water



Save more energy with high efficiency water pumps

Standard efficiency pumps have a lower initial cost, but their inefficiency ends up costing you more over time. Higher efficiency water pumps use less energy, helping reduce your operating costs.



VFD pump upgrades help optimize well and booster pump performance

Well pumps (often vertical turbine or submersible) and **booster pumps** (often vertical turbine with inline centrifugal) are commonly used in vineyard irrigation systems to extract water from underground reservoirs. Turbine pumps are installed in wells and pump groundwater for irrigation use, while booster pumps are generally used to pressurize water for irrigation systems. **Both types of pumps are eligible for rebates for VFD installation.**



What is a VFD?

Single-speed pumps only run at one speed and are usually sized to meet a vineyard's maximum demand. When demand is lower, single-speed pumps waste excess energy by mechanically restricting flow. This type of control may result in higher system pressures, poor flow control and potential overwatering. VFDs control pumps by varying the frequency and voltage supplied to the pump motor—**regulating power on the pump according to need.**

VFDs can also improve the longevity of pumps and irrigation lines because they power the pump at its best efficiency point. Regulating pressure with ramp-time slow-start capabilities can also limit pressure surges and reduce the chance of problems caused by water hammer. Consistent pressure also means less stress on bearings and seals and fewer repairs to lines. **VFD-controlled pumps** are one of the most cost-effective technologies that lower long-term utility and system maintenance costs.

AT THE WINERY

Save money on installing floating head pressure controls, upgrading pipe insulation, upgrading glycol pumps and replacing boilers



Energy-saving benefits of installing floating head pressure controls for winery refrigeration systems

Refrigeration systems are the largest energy consumer at the winery stage, so they should function as efficiently as possible. Floating head pressure controls are relatively easy to install and reduce refrigeration system power consumption. These controls extend the lifespan of compressors and save energy in cooler months as head pressure is regulated with air temperature.



Energy-saving benefits of VFD upgrades for glycol pumps

As with irrigation pump VFD upgrades, glycol pumps can benefit from variable speed flow control, ramp-downs and slow-starts. AESAP provides rebates for glycol pump VFD upgrades at wineries.



Gas-saving benefits of boiler replacements for wineries

Boilers—like those used for sanitation, hot water and steam—present an opportunity for energy savings at wineries when you replace them with a more efficient model. High-efficiency boilers can reduce natural gas use and pay for themselves in energy savings in as little as one year.



Gas-saving benefits of steam and hot water pipe insulation

Uninsulated pipes result in energy waste and unwanted exposure to carbon dioxide emissions. Fortunately, you can mitigate these harms by insulating your hot water or steam pipes.

AT THE **BOTTLING** PLANT

Rebates on boiler replacement and
boiler economizers



When it comes to optimizing your boiler operations for your bottling facility, there are two key options: **installing an economizer or a total replacement.**



Energy-saving benefits of boiler economizers

Waste heat recovery systems make a steam boilers more efficient by capturing and re-using heat energy that would otherwise have escaped out of a flue or chimney. Boiler economizers reduce boiler fuel requirements by transferring heat from the flue gas to incoming make-up water. Utilizing recovered heat improves boiler efficiency and often reduces fuel requirements by 5% to 10%. Fuel savings resulting from boiler economizers can produce a rapid return on investment while reducing the release of greenhouse gases.



Gas-saving benefits of boiler upgrades for bottling plants

Boilers likely present the best **gas-savings** rebate opportunity for wine bottling plants. Replacing your existing boiler with a more efficient model can help cut energy costs by reducing overall energy consumption.

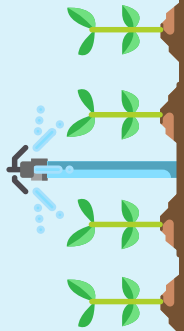
Grape to Bottle:

Energy efficiency rebates for vineyards and wineries at every phase



STAGE 1:

Vineyard

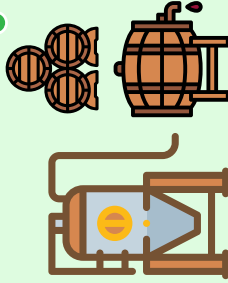


AVAILABLE MEASURES

- ✓ High Efficiency Water Pump
- ✓ Irrigation Pump VFD

STAGE 2:

Winery

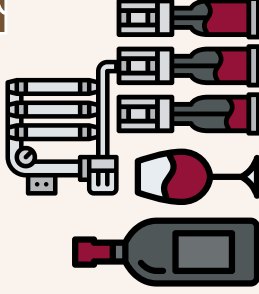


AVAILABLE MEASURES

- ✓ Floating Head Pressure Controls
- ✓ Glycol Pump VFD
- ✓ Like-Kind Boiler Replacement
- ✓ Pipe Insulation

STAGE 3:

Bottling Plant



AVAILABLE MEASURES

- ✓ Boiler Economizer
- ✓ Like-Kind Boiler Replacement



Custom energy projects: **savings beyond energy rebates**

AESAP helps ensure your winery can achieve optimal efficiency, no matter what you need to upgrade. Customized incentives are tailored to meet the specific needs of your operation. No-cost project support and engineering services are available.

Example custom projects for wineries include:

- Improving aerator efficiency for wastewater treatment
- Replacing metal halide or linear fluorescent lights with energy-efficient LEDs
- Compressed air upgrades and refrigeration improvements
- Advanced VFD upgrades

Learn how you can **lower energy costs and save water**

Reduce operating expenses and increase profit margins without impacting the quality of your wine with help from AESAP. Visit us at agenergysavings.com to view available incentives, equipment specifications, financing resources and more.



Have specific questions about your business? **Get in touch today!**

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