



# PILLARS OF SUSTAINABILITY



NEW ZEALAND WINE  
PURE DISCOVERY



## ENERGY

**Countries all over the world are exploring different sustainable solutions to change how energy is generated, supplied and utilised.**

While New Zealand draws most of our electricity from renewable sources (water and wind), the rising cost of electricity and high-energy demands of wine production have increased industry focus on finding sustainable solutions and alternatives.

The Sustainable Winegrowing New Zealand programme encourages vineyards and wineries to minimise their environmental impact and reduce operating costs by adopting energy-saving initiatives and practices.

Benchmarking and tracking energy use within the industry is a key focus of the programme. Information is analysed then passed on to members so they can compare their energy use to industry averages, and adopt new methods to help increase energy efficiency.

### INITIATIVES ON EFFICIENT ENERGY USE

The 'Strategy for Improving Energy Use in the Wine Industry' project was undertaken by New Zealand Winegrowers in 2005, with support from Sustainable Farming Fund of the Ministry for Primary Industries. It established a benchmark for the industry and identified opportunities for improving energy use efficiency within it.

The project consisted of two stages. The first stage was an industry-wide survey,

which helped establish a baseline benchmark of energy use. The second stage involved developing a 'do-it-yourself' energy measurement process.

The BEST (Benchmarking and Energy and Water Savings Tool) Winery tool, developed for the Californian wine industry, was adapted and adopted by New Zealand Winegrowers. The tool identified a target list of energy improvement opportunities for wine businesses to explore to make cost savings and reduce their environmental impact.

The energy improvement project helped identify a number of initiatives to help businesses with resource use and carbon efficiency.

The initiatives suggested include:

- Providing national, regional and same-sized operation benchmarks in key areas (for example energy and water).
- Supplying members with individualised reports (vineyard and winery summary tables and graphs) that tracks their performance against established benchmarks.

### SCORECARD REPORTING, BENCHMARKING AND TRACKING

Sustainable Winegrowing NZ members submit data about resource use and sustainable practices annually using a scorecard. This information is analysed across the industry to enable benchmarking.

Benchmarking reports allow members to compare their use with industry averages, and scorecards enabled them to start their tracking energy usage year-on-year.

- Personalised reports are sent to members containing their original data and any adjusted figures and comments.

- Regional and national reporting is made available so members can compare their vineyard and winery energy use against their peers, and investigate ways to help improve their performance.

### BENCHMARKING

Benchmarking energy use helps wine businesses to improve their own energy efficiency by tracking their performance over time, and comparing their use against that of similar sized wineries and vineyards.

Benchmarking energy consumption:

- Provides a starting point for reducing energy costs.
- Raises awareness of energy use within the industry.
- Raises relative performance of wineries.
- Provides practical guidance on how savings can be made.
- Provides examples of how other wineries have improved energy use.

### THE BEST WINERY TOOL

The Benchmarking and Energy and Water Savings Tool (BEST) is an integrated benchmarking and self-assessment model for the wine industry. It was developed in California, and adapted to New Zealand conditions by New Zealand Winegrowers.

It allows a winery to compare their energy and water efficiency against a best practice reference winery model. The performance of the winery against the model is calculated, and expressed as an Energy Intensity Indicator (EII).

The energy indicator that best reports the energy use efficiency of a winery operation is the kilowatt-hours of energy used per litre of juice processed (kWh/litre of juice).



Once their winery performance has been evaluated, the member can choose alternative energy or water measures, input them into the BEST tool, and see how the alternative measures would perform. The model will calculate the overall energy and water savings, cost savings, and a re-calculated efficiency value.

The BEST tool enables the winery to evaluate energy and water efficiency options, and assists them to make the right decisions to help improve energy use.

## STANDARDS FOR VINEYARDS AND WINERIES

To monitor, measure and limit energy resources in order to demonstrate economic and efficient use.

Members should:

- Establish a programme to monitor, measure and minimise energy use.
- Record annual energy use compared to wine production.
- Record the annual total electricity used in the winery, for example in the powering of winery machinery, air-conditioning and refrigeration.
- Record the annual total volume of diesel, oil, natural gas and LPG that is used, for vehicles, pumps, boilers, other winery machinery and associated transport.

This information is reported to Sustainable Winegrowing New Zealand and personalised reports are generated to allow members to better understand their energy footprint and identify areas that need improvement.

## ENERGY USE MANAGEMENT

### PRACTICES

Examples of energy-saving practices used in wineries include:

- Running air conditioning units at night.
- Keeping cool room doors closed at all times.
- Putting lights on sensors.
- Replacing sodium lights with energy efficient light bulbs.
- Turning off lights and power points when not in use.
- Ensuring new buildings are built to maximise natural light.
- Ensuring heating and refrigeration tanks are well insulated.

- Employing new technology for cold stabilisation can reduce refrigeration time.
- Switching off refrigerators when outside temperature falls to a satisfactory cellar level.
- Converting from cold settling to flotation or centrifugation practices to clarify juice.
- Re-using energy, such as using a heat exchanger to recover energy from refrigeration system to heat hot water.
- Engaging in efficient use of heavy equipment such as forklifts to save fuel.

Central to our sustainability policy is a commitment to keep improving, as new research is undertaken and new technologies are developed. The New Zealand wine industry is actively involved in both of these areas, with an ongoing leadership role in research and development projects. Looking to the future, we will continue to protect the places that make our exceptional wines.

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