

CLIMATE CHANGE AND EFFICIENT RESOURCE USE: CASE STUDY 3

HUIA WINE Company claims climate change credentials

THE BUSINESS

- Huia Vineyards Ltd was established by Mike and Claire Allan in 1996, in Marlborough's Wairau Valley.
- The company owns a 400 tonne crush winery and just over 35 hectares of vineyards.
- Eighty-five percent of the wines produced are exported, with the main markets being the United Kingdom including Ireland, the United States and Australia.



Huia Vineyard's directors, Claire and Mike Allan.

WHAT IS CLIMATE CHANGE?

Increased concentrations of human-induced greenhouse gases in the atmosphere are warming the climate. These gases trap heat normally radiated into space and reflect it back to Earth. Greenhouse gases implicated in climate change include:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs) and
- Sulphur hexafluoride (SF₆)

Greenhouse gases are expressed as carbon dioxide equivalents (CO₂-e).

(Source: www.carbonzero.co.nz)

In 2008, Marlborough wine company Huia Vineyards Ltd and its products were certified as carbon neutral under the carboNZero^{Cert}™ programme. This programme involves measuring then reducing greenhouse gas emissions. The company offsets remaining emissions by supporting a local native forest regeneration project.

CARBON NEUTRALITY DEMONSTRATES GREEN CREDENTIALS

"Being certified as carbon neutral is a robust way to demonstrate our total commitment to reducing and mitigating our carbon footprint while maintaining profitability," says Huia owner-director, Claire Allan.

As a family-owned business, Huia places strong emphasis on looking after the natural environment for future generations. Accepting a share of the responsibility for human-induced climate change is part of its over-arching environmental policy.

The company is Sustainable Winegrowing New Zealand-certified and is in transition to BioGro (organic) certification. Carbon neutrality covers not only grape and wine production but also export and distribution dimensions of the business.

Huia registered with the carboNZero programme because it offered the rigour required for credible compliance. The carboNZero^{Cert}™ programme was set up by Landcare Research in 2001. Carbon credits are created by projects that:

- avoid greenhouse gas emissions through renewable energy generation projects;
- reduce greenhouse gas emissions by energy efficiency;
- sink carbon dioxide, for example, in plantation forests or regenerating native bush.

"We are making real efforts to reduce our carbon footprint while improving energy efficiency," says vineyard manager Matt Oliver, who oversees carbon accounting for the company. "The money we pay to mitigate emissions supports the return of native bush to the hills we can see out our winery window."

MEASURING HUIA'S CARBON FOOTPRINT

Every invoice is analysed for the carbon as well as dollar debit it represents, with totals tallied every month.

Huia's total emissions in 2006/2007 (its first measurement period) were 183.9 tonnes of carbon dioxide equivalents (CO₂-e). The following year, emissions increased by 24 percent to 228.2 tonnes CO₂-e, mostly due to a 31 percent increase in grapes harvested.

Carbon dioxide emitted during fermentation is excluded from Huia's carbon accounting.

"There are sound reasons for that," says Matt. "Vines take in carbon dioxide as they grow, which helps balance these emissions."

MANAGING THE FOOTPRINT

Huia was committed to energy efficiency from the outset, so managing greenhouse gas emissions simply involved fine-tuning rather than major changes. However, in the company's second year of carboNZero certification, a number of critical benchmarks have improved.

BENCHMARK	2006/07	2007/08
Irrigation electricity (kWh/m ³)	0.559	0.395
Tractor diesel (l/ha)	276.0	157.0
Winery electricity (kWh/t)	240.0	165.8

PACKAGING

Steps taken to reduce packaging include reducing waste by better management of ordering, improved bottling practices and increased recycling. The company will switch to lightweight bottles once it's certain there will be no adverse market reaction.

FUEL

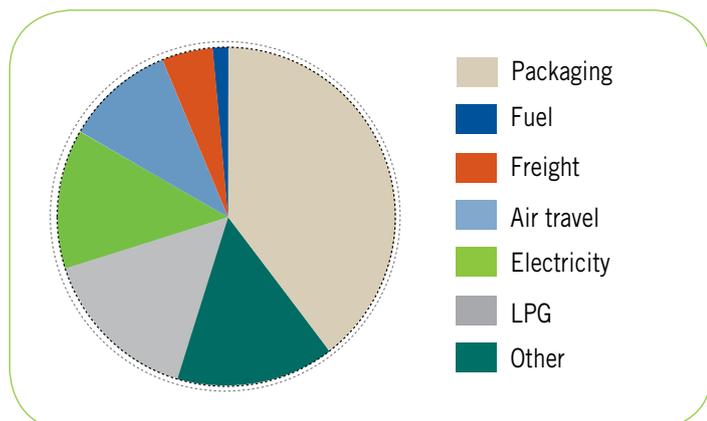
A fall in diesel use since Huia first achieved carboNZero certification is partly due to records now separating tractor diesel from other uses such as fuelling wind machines for frost protection, winery water heating and the winery van.

A diesel water heater in the winery has been replaced with a faster, more efficient gas heater.

Improved planning has reduced travel between vineyards. One less trip represents 21 kilometres less tractor travel and a saving of about 10 litres of diesel. Tasks like mowing are done less frequently or in conjunction with other jobs.

Further reductions would require significant capital outlay, for example replacing a tractor with a more efficient model or converting to biofuel.

EMISSIONS SOURCES FOR HUIA VINEYARDS, 2007/08



FREIGHT

Huia's policy is to freight product using trains and ships which are relatively energy-efficient. When possible, containers are packed with individual cartons which fill space more efficiently than cartons stacked on pallets. Export consignments are consolidated with wines from other small companies, to fill containers. Road transport emissions have declined significantly due to more containers being shipped from nearby ports.

Long-haul air freight is used only to urgently dispatch wine samples to distributors or shows.

AIR TRAVEL

Because air travel is expensive, marketing trips are intensively planned and extremely busy.

"We could make less overseas marketing trips and use the internet to keep in touch with markets," says Matt. "However, as a small family-owned company the reality is that regular direct contact with customers is important. We are offering a hand-made product that has to be hand-sold."

ELECTRICITY

Considerable input went into incorporating energy efficiency into the winery's original design. The aim was to minimise electricity costs and create a cool, dry environment with a through-flow of clean air.

"We didn't want a fully insulated building which wouldn't breathe," says Huia winemaker and director, Mike Allan. "The resulting damp encourages the growth of all sorts of moulds and fungi."

Incorporation of recycled materials gives the winery an established look, but it was built in 1998 of white Colorsteel which reflects rather than absorbs heat.

Tanks are housed indoors and many are insulated. Eaves have been left open to create a cooling effect.

"The challenge is to do things at the right time and not rush," says Mike. "For example, grapes are harvested early in the morning so they come in cold. After racking, juice is left a couple of days to warm naturally rather than artificially."

Cold stabilisation – when wine is plunged to minus two degrees celsius to remove any tartrate crystals – is carried out in winter when below zero temperatures aid refrigeration.

Efficient sodium lights and energy efficient bulbs are used to light the winery and also the offices where oil column heaters have been replaced with a more efficient heat pump.

FOR MORE INFORMATION

- Huia Vineyards is at www.huia.net.nz
- The carboNZero programme is at www.carbonzero.co.nz
- Forest regeneration through EBEX21 is at www.ebex21.co.nz

In the vineyards, a new submersible irrigation pump and headworks was installed in 2007, resulting in significant savings. Regular maintenance minimises energy wastage.

Huia is now seeking an electricity company to provide electricity – preferably carbon neutral – at a cheaper rate, at off-peak times.

“If we could do cold stabilisation over six weeks instead of a month by using electricity only at night when off-peak rates could be paid, we would reduce both our power bill and our carbon footprint,” Mike observes. “Vineyard pumps could also be run at night.”

FERTILISER

Huia's switch to organic production has meant reduced use of energy-intensive synthetic fertiliser.

NATIVE FOREST CREDITS MITIGATE DEBITS

The final step to carboNZero certification is buying verified carbon credits to offset remaining emissions.

Mike and Claire were keen to purchase credits associated with a local native forest regeneration project through Landcare Research's Emissions Biodiversity Exchange for the 21st century (EBEX21) programme. Once purchased, these credits are retired or cancelled so they can't be on-sold or used again.

Each year, Huia funds the regeneration of 660 hectares of native bush on a farm about 10 kilometres away from the Huia winery, on the north side of the Wairau River. In 2008, the credits were worth \$36 per hectare (after costs). This was based on three emissions units (EUs) worth about \$22 each being stored per hectare, with around \$10 per unit deducted to cover costs.

Key points

- 1 Human activities increase the concentration of greenhouse gases in the atmosphere, which causes the atmosphere to heat.**
- 2 New Zealand businesses seeking to minimise their contribution to climate change are signing up to programmes which take them through the steps to carbon neutrality.**
- 3 Huia is certified as carbon neutral under an internationally accredited programme, carboNZero. Developed and managed by Landcare Research, carboNZero involves measuring a business's greenhouse gas emissions, managing (reducing) these emissions then mitigating debits by offsetting with verified credits from credible New Zealand projects.**
- 4 Huia's emissions in 2007/08 were 228 tonnes of carbon dioxide equivalents (CO₂-e); 24 percent higher than in the previous measurement period, due mostly to a 31 percent increase in the grape crop. Huia purchased carbon credits created by the regeneration of native bush under the Landcare Research's Emissions Biodiversity Exchange for the 21st Century (EBEX21) programme.**



Grazing sheep amongst the vines keeps the grass cropped short, reducing the need for mowing and saving on fuel use.

MAKING THE BALANCE WORK

Compromise is sometimes required, between business and environmental values. Examples include:

- The progressive replacement of wooden vineyard posts with more expensive steel stakes. These stakes may have a higher carbon footprint but break less often, thus reducing waste and energy expended on replacements. Also, they have not been treated with chemical preservatives.
- Going organic required buying another tractor to cultivate undervine for weed control. Carbon sequestered in the soil under organic management may eventually be accepted as carbon credits, but meanwhile the purchase has increased the carbon cost.

COUNTING COSTS AND BENEFITS

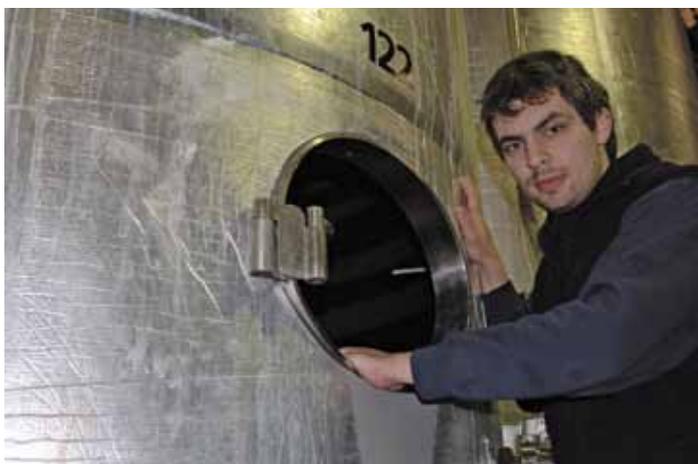
Apart from the cost of obtaining credits, carboNZero expenses include the annual joining subscription, audit fees, trademark usage and the time involved.

In mid-2009, Huia was calculating its 228 tonne 2007/08 carbon emissions would cost \$5700 to \$6840, with a proportion of this amount meeting Landcare Research's costs.

"Initially, carbon accounting was challenging with an enormous amount of paperwork involved," says Matt. The first certification took 18 months from when the company started working on its carbon footprint in December 2006.

A straightforward spreadsheet has since been developed to record credits and debits. This means more staff can be involved, with carbon accounting now a down-time task.

For Huia, the main benefit of carboNZero certification is credibility rather than marketing edge. However, accelerated environmental awareness in wine markets and increasing demand for accountability translate to a clear marketing advantage, acknowledges Matt.



Huia's wine tanks are stored indoors and many are insulated, keeping their temperature stable and reducing the need for artificial warming and cooling. Pictured is Simone Cambioni, an Italian winemaker in New Zealand for the 2009 vintage.



Farmer Geoff Adams is farming carbon along with sheep, cattle and grapes. Regenerating native bush accumulates carbon credits, sold to companies including Huia to offset their debits.



Huia vineyard manager, Matt Oliver, oversees carbon accounting for the company.

HANDY HINTS/WORDS OF ADVICE

- Before proceeding with a certification programme, make sure accounting and compliance systems are in good order.
- Think about where improvements could be made and target data gathering to those areas.
- Be prepared for surprises. Huia got one when packaging figures came back at close to 80 tonnes, compared with an anticipated 30–40 tonnes.

THIS IS ONE IN A SERIES OF CASE STUDIES CALLED CLIMATE CHANGE AND EFFICIENT RESOURCE USE

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