

A craft brewery on the path to sustainability:



To make 1200 litres of beer breweries need to boil approximately 1700L of water. This is the MOST energy intensive component of the brew process.

Problem: Up until March 2008 *Buckleys* did this with a giant electric kettle. 1700L of water needs 7 hours at 27kW to boil from 15 degrees...that's 189 kWh per brew...that's **189 kg of coal fired carbon emissions*** just to START the brew!

***it is commonly accepted that 1kWh of energy requires 1 kg of carbon production from coal power stations.**

Solution: Now *Buckleys* have installed vacuum tube based solar panels to preheat the water required. *Buckleys* are now able to get the 1700L of water to a prebrew temperature of 80°C **carbon emission free.**

Boiling water from 80°C requires only 44kWh..thats 44kg of carbon. A 144kg carbon emission saving on every brew!

boiling from 15 degrees: 27kWh * 7 hours
= 189kWh = 189kg of coal fired power station carbon.
boiling from 80 degrees: 27kWh * 1 hour 38 minutes(1.65hours)
= 44kWh = 44kg of coal fired power station carbon.
the good brew company helped reduce the Buckleys carbon footprint by 144kg!!
Thats a reduction (for this, the most carbon extensive) stage of brewing of 77%!



Rick Rogers from Apricus Solar shows John how it all works



Dean & John are ecstatic about doing their bit to save the planet

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Most microbrewers already have many environmentally beneficial procedures in place:

John at *Buckleys Brewery* gives his spent grain to farmers who feed the luckiest cows in Australia.



Max (the farmer) and Dean (the sustainability consultant) empty the slightly nutrient depleted grain out of the mash tun.

Many craft breweries in America and Germany have reusable bottle systems..reducing the energy cost of bottled beer.



kat & nina (germany) celebrate the ease with which they can help the environment by buying beer in bottles and returning them to the brewery/supermarket they bought from.

Many craft breweries also use the following methods to minimise their environmental impact:

They:

- are local (within 50km) of their consumers.
- use heat exchange technology to maintain the heat energy required for the brewing process.
Almost all craft breweries do this.
- use green power to power the rest of the brewery.
Mountain Goat does this.
- encourage workers to ride to work (xmas bonuses)
Mountain Goat does this too.
- Catch all rain water from the roof to use for rinsing, washing, bathroom facilities.
Mountain Goat & Glenbar do this too.
- Use only natural ingredients, no GMO's and no preservatives
Glenbar is a specialist in this field..they are an organic brewery & they malt their grain organically as well.
- Use recycled paper based boxes and stationary
- Reuse all byproducts from the brewing process.

All craft breweries have an appreciation of the "goodness" left behind in the byproducts of their brewing and either give their used grain to farmers or some breweries in America even use their old grain to grow mushrooms which they sell to their healthy customers