

Clean and green brewery points the way to water and energy gains for food and beverage industry



A water recovery plant designed to target world's best-practice water reuse standards in the food and beverage industry has exceeded its designers' high expectations in its first year of service at the new Bluetongue brewery in Australia.

The waste water treatment and green energy plant at the \$120 million Pacific Beverages' Bluetongue Brewery in NSW also provides valuable renewable energy for the brewery, reducing its dependence on fossil fuels and ultimately cutting overall energy needs by 15 per cent.

The plant – engineered by Australia's CST Wastewater Solutions in partnership with Global Water Engineering (GWE) – has achieved all the high environmental

performance targets set by Pacific Beverages (a joint venture of SAB Miller and Coca Cola Amatil), says CST Wastewater Solutions Managing Director Mr Mike Bambridge.

The plant was a finalist in two categories of the 2011 Engineering Excellence Awards, Sydney, conducted by Engineers Australia, which attracted a record field of more than 90 entrants. Bluetongue was a finalist in the Environmental and Heritage category and the products, manufacturing, facilities and processes category.

Pacific Beverages designed the plant to ultimately have an annual capacity of 150 million litres, while targeting a reduction in water usage to 2.2l per litre of beer produced. This figure is amongst the best in the world and certainly well above the global average of 4 - 5 litres of water to every one litre of beer, says the CEO of Pacific Beverages Mr Peter McLoughlin.



The GWE anaerobic technology plant employed at the installation produces sufficient green energy (methane) from its closed anaerobic reactor to power a designated steam boiler and cut the brewery's overall energy consumption by about 15 per cent. This equates to about 300,000 Mj.

Mr Bambridge says this the plant indirectly reduces the brewery's carbon footprint by reducing the brewery's demands on fossil fuels and the electricity

needs for wastewater treatment by using energy-friendly anaerobic pre-treatment technology, in which GWE is a world leader.

“This is a landmark achievement of water conservation and green energy production, achieved by combining the latest versions of advanced and reliable technologies available globally,” said Mr Bambridge. “It demonstrates the technology’s practicality for extensive use not only throughout the Australian food and beverage sector – which involves more than 20,000 companies – but also globally, says Mr Bambridge.

Besides the economic advantages of GWE’s anaerobic wastewater treatment, there is also a clear environmental advantage in significantly reducing factories’ carbon footprint. This is done not only by supplying renewable energy from the closed anaerobic reactor, thus reducing or even eliminating reliance on fossil fuels, but also by replacing traditional, open, methane-producing lagoons, and by replacing power-consuming, sludge-producing aerobic WWTPs.

“The concept of using wastewater to create green energy is much more widely applicable than often realized. Any factory with a biological waste stream or wastewater with high COD (Chemical Oxygen Demand) can easily use this model to generate energy,” says Mr Jean Pierre Ombregt, CEO of GWE.