

Advanced anaerobic COHRAL™ system helps agribusiness clean up waste water while harvesting green energy

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A cost-effective way to simultaneously increase the quality of waste water produced by agribusiness while disposing of an expanding odour pollution issue is being deployed to assist crop and livestock operations to achieve higher environmental standards.

The COHRAL(TM) technology of Global Water Engineering (pictured) involves a Covered High Rate Anaerobic Lagoon that uses concentrated anaerobic bacteria to digest at least 70 per cent of the organic matter (COD, or Chemical Oxygen demand) in waste water to produce effluent of far higher quality than open lagoons.

Even higher water quality standards – typically exceeding 90 per cent COD removal and up to 99 per cent in some instances – can be achieved by using GWE anaerobic and complementary technologies contained in totally enclosed tanks, or reactors, making it suitable for discharge in surface waters, says Global Water Engineering CEO Mr Jean Pierre Ombregt, who has been a world leader in clean water and green energy solutions for more than 35 years.

COHRAL(TM) technology – including the first example in Australia now being engineered by CST Waste Water Solutions – eliminates many of the odours associated with open lagoons often used in meat, dairy and crop waste processing. These are increasingly leading to environmental protests and land use conflict as urban expansion and rural businesses operate in greater proximity to each other, said the Managing Director of CST Waste Water Solutions, Mr Michael Bambridge, whose company represents GWE technologies in Australasia.

“Another major benefit of covered anaerobic lagoons and of totally enclosed anaerobic reactor systems is that the methane biogas produced within them by the anaerobic process can be collected and used to feed steam boilers and processing plant, replacing fossil fuel. This has been demonstrated in many GWE applications worldwide to repay for the cost of an anaerobic system in as little as a year or two - and then to go on to save thousands and millions of dollars in fossil fuel costs over succeeding decades,” said Mr Bambridge.

The first COHRAL(TM) installation in Australia, to be employed at a meat processing and packing plant, will feature reuse of the biogas in the boilers. Closed lagoons not only prevent methane escaping into the atmosphere (where it is many times more damaging to the atmosphere than Co₂ emissions) but also generate energy, rather than being heavy consumers of energy in processing and oxygenation.

“Open lagoon wastewater treatment systems were popular with industry because they were simple, cheap and easy to operate, allowing an ‘end of pipe’ solution to wastewater issues. They were, in effect, often used as dumps for problems occurring in processing, not recognising the loss of a valuable recoverable product – energy!” said Mr Bambridge.

“However, these systems are now being recognised by governments worldwide for their environmental downsides, including their poor ability to control algae and suspended solids in warm weather and poor efficiency in removing pollution load.