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(Attn media including beef, poultry, pork, lamb, agribusiness, dairy and meat processing, food and beverage, environmental, energy, fruit and vegetable, infrastructure, government, manufacturing, process engineering, safety and water and wastewater media)

LEFT PICTURE *Australian Federal Industry Minister Ian Macfarlane, second left, performs the official launch ceremony, congratulating the Managing Director of NH foods Australia Mr Takeo Kudo and (right) the General Manager, Overseas Operations Department, Fresh Meat Business Division, NH Foods Mr Norio Itazaki and (at left) the General Manager of Nippon Meat Packers' Oakey Beef Exports Mr Pat Gleeson.* ***RIGHT PICTURE*** *CST Wastewater Solutions Managing Director Mr Michael Bambridge, Centre, outlines the new Global Water Engineering plant to Minister Macfarlane, right, and NH Foods Mr Andrew Trianace*

GWE green energy plant hailed as a model for meat, agriculture and organic waste processing worldwide

A green energy initiative by the leading Japanese meat processor NH Foods at Oakey Beef Exports in Australia has been praised as an environmental and business efficiency model for food producers worldwide.

The Global Water Engineering COHRAL™ plant installed by CST Wastewater Solutions – officially opened this month by Australian Federal Industry and Science Minister and MP for Groom Hon Ian Macfarlane – will extract green energy biogas from its waste water streams to replace millions of dollars' worth of natural gas currently consumed at the abattoir on Queensland's Darling Downs.

The plant – the first GWE Covered High Rate Anaerobic Lagoon in the world – will produce 183.3 gigajoules of energy a day when it reaches design capacity through the combustion of methane produced. The new plant delivers high quality waste water by extracting organic content, which it converts into methane to replace fossil fuels. The GWE anaerobic digestion technology involved can remove more than 70-90 per cent of organic waste content.

"The green energy produced represents 40 per cent of our current usage of natural gas and will produce direct ongoing savings year after year. The cost of construction is expected to be repaid inside five years," said Oakey Beef Exports General Manager Mr Pat Gleeson. Additional benefits include reduced greenhouse gas emissions, improved quality of wastewater and greatly reduced odour emissions from the plant. "The effect of burning the methane will save the equivalent of 12,000 tonnes of CO_2, equivalent to removing 2700 cars from the road," Mr Gleeson told the official launch function on April 10.

"Our parent company NH Foods is pleased to have undertaken another innovative project that again demonstrates their continued commitment to business sustainability, the industry, our employees, the community and the environment. This is a world class initiative, with Nippon Ham providing a model for the benefits of foreign investment in Australia."

Federal Minister Mr Macfarlane said the project was a poster child that served as an example to industry throughout Australia and worldwide. "This is a good project whichever way you look at it," he said, including as a community asset, as an industry initiative funded on its own merits without government subsidy, and as a scientific, energy and industry advance that produces green energy as it reduces emissions." It is a sign of confidence of Japan investing in Australia. "This is one of the most modern – if not the most modern – meat works in Australia," he said of the Oakey plant, which is already one of Australia's largest beef export plants and is currently undergoing an expansion to increase production from 298,000 head a year to 560,000, with employment rising from 750 to as many as 1400.

In addition to lowering the plant's dependence on increasingly expensive supplies of natural gas, the Global Water Engineering anaerobic digestion plant will simultaneously produce waste water far cleaner than typical waste lagoons.

The installation of the GWE COHRAL™ technology by Australian environmental engineering and green energy authority CST Wastewater Solutions is the first GWE COHRAL™ installation in the world, deploying for the first time in a covered lagoon GWE anaerobic technology proven in more than 300 reactor (tank) installations worldwide.

Global Water Engineering has been a world leader in clean water and green energy solutions for more than 35 years. Its anaerobic waste water and green energy technology has been proven in a wide variety of livestock, crop and beverage production facilities and is applicable to any industry with an organic waste stream. Applied at a Thai cassava starch sludge processing facility, the technology won the latest (2014) green energy award of the International Institution of Chemical Engineers, IChemE, which has more than 40,000 members worldwide. The award to GWE Chairman and CEO Mr Jean Pierre Ombregt recognised the best project or process to demonstrate innovation in renewable energy, alternative energy sources, efficient energy use or the development of energy production methods that reduce energy and water intensity.

COHRAL™ technology – which is applicable to both livestock and cropping operations – uses concentrated anaerobic bacteria to digest 70-85 per cent of the organic matter (COD, or Chemical Oxygen Demand) in Oakey Beef Exports' waste water to produce effluent of far high quality than typical open lagoons. Closed tank (reactor) designs, where applicable, can achieve even higher digestion levels and efficiencies, with more than 90 per cent achieved in service by GWE plants.

The biogas storage design selected for Oakey Beef – a 6000m^3 capacity flexible pvc-coated polyester fibre flexible storage balloon pictured above – is engineered to be permanently gas-tight with high operational reliability and optimum safety.

“The safe, durable and environmentally harmonious COHRAL™ technology deployed at Oakey Beef can be widely applied worldwide to food, beverage and agricultural and primary processing plants,” says CST Wastewater Solutions Managing Director Mr Michael Bambridge, whose company represents GWE technology in Australia and New Zealand. “Oakey Beef Processing and its owners NH foods have taken a far-sighted initiative that opens the way to cleaner, greener and more profitable industry performance,” he said.

Another major benefit of covered anaerobic lagoons is that the methane biogas produced within them is not only prevented from escaping into the atmosphere (where it is many times more damaging than CO_2 emissions) but is also harnessed to generate energy – rather than waste water being heavy consumers of energy in processing and oxygenation.

“In addition to the obvious waste-to-energy benefits, the process also helps curb odours that emanate from open lagoons in processing plants. This is becoming a much bigger issue in Australia as urban encroachment means agribusiness and expanding communities are located much closer to each other than previously.”

“So instead of open lagoons being potential dumping grounds for environmental problems, closed installations such as Oakey Creek’s represent an outstanding contribution to good community relations.”

“Yet another outstanding benefit is that anaerobic digestion produces reliable and predicable base load power – unlike some other green energy technologies, it is not dependent on the wind blowing or the sun shining.”

Nippon Ham has supported innovation – such as the new GWE plant – since the initial purchase of Oakey Abattoir in 1987, investing more than $A100 million dollars to grow capacity from 300 head a day to the current capability of 1300 head a day, which pat Gleeson says includes state-of-the-art traceability of product.

“Our next phase of plant development is in the final design stage, focused on upgrading the existing cold storage and chilling capacity with a construction cost of $A50 million over the next two years,” he says. “Operating in a global market, as a premium exporter to 34 countries, means that our manufacturing processes need to be respectful, sustainable and efficient,” he says.

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