

Vina Kraft paper plant achieves global waste water and biogas green energy sustainability standards



One of Asia's newest paper mills is setting global benchmarks for the environmental standards achieved by its waste water processes while also saving millions of litres of fuel oil by extracting biogas from effluent to reduce its carbon footprint.

The Vina Kraft paper joint venture in Bin Duong Province of Vietnam – with an annual production capacity of 220,000 tons – uses an anaerobic/aerobic treatment tertiary plant from Global Water Engineering to cut effluent chemical oxygen demand (COD) pollution levels by 99 per cent while also producing up to 12,300 Nm³ of biogas a day, equivalent to 8,800 l/d of fuel or several million litres a year.

The paper mill was built to produce packaging paper for food and beverages, consumer products, clothing and shoes, electrical appliances and furniture. The plant was constructed to achieve world's best environmental standards in its treatment and recycling of effluent and in its extraction of green energy to power boilers and heat processes as an alternative to fossil fuels.

“This achievement is really a wakeup call for a huge variety of food, fibre, beverage and primary processing industries seeking to develop models for sustainable development,” says GWE CEO Mr Jean Pierre Ombregt.

“There is a huge, often hidden, potential in using wastewater as a source of renewable energy while simultaneously protecting the environment. In addition, biogas green energy is more reliable and versatile compared with solar and wind because it is produced 24/7 at a high rate and can generate both heat and electrical power.

“Optimized waste water treatment combined with the extraction of green energy and water re-use makes a lot of sense - not only as a counter to global warming and water scarcity, but also as an insurance policy or hedge against future fossil fuel price fluctuations that are often impossible to predict. Efficient processes also help manage dwindling fresh water resources,” says Mr Ombregt.

The Vina Kraft plant has a capacity of 12,000-13,200 m³/d wastewater and maximum of 57,400 kg/d Chemical Oxygen Demand (COD) effluent. Performance achievements to date – on influent of up to 6100 mg/l COD and after anaerobic, aerobic, tertiary DAF/flocculation treatment and advanced oxygen processes (AOP) – include:

*** 50/60 mg/l COD and 3-5 mg/l BOD (biochemical oxygen demand), compared with typical best international standards around 100 mg/l COD and above for this kind of effluent, and 15/30 mg/l BOD.**

*** The system also delivers extensive recycling of treated waste water, with up to 50 per cent being suitable for re-use use as process water**

*** Strict odour control, attaining top international standards in this area through the use of a covered ANUBIX™- B upflow anaerobic sludge blanket (UASB) reactor for biological wastewater treatment.**

GWE has successfully built and commissioned more than 75 biogas utilisation systems for clients worldwide.