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Food processor turns waste products into green energy

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A global exporter of processed potato products, Remo-Frit, has demonstrated the environmental and economic benefits of converting waste products into green energy. The company specialises in the production of fresh chilled potato products.

Global Water Engineering (GWE) built a wastewater treatment plant and RAPTOR plant for the solid residues of the Remo-Frit potato processing plant in Verrebroek, Belgium. The GWE technology involved is represented in Australasia by CST Wastewater Solutions.

The RAPTOR system converts nearly all of the potentially environmentally harmful organic content of the solid wastes into green electricity and valuable fertiliser products. The process is complemented by and integrated with a high-efficiency GWE wastewater treatment plant to achieve the high wastewater quality standards and optimum biogas production efficiencies specified by Remo-Frit.

RAPTOR (Rapid Transformation of Organic Residues) is a powerful anaerobic digestion process which in this application consists of a mechanical pretreatment of the organic residues (mainly the potato peels), thermophilic hydrolysis in a TAR (thermophilic acidogenic reactor) followed by methane fermentation in a thermophilic digester of the ANAMIX-T type.

Out of a 3300 m^3 digester for the potato peels and primary sludge, GWE is able to produce up to 14,150 m^3 of biogas per day from ±230 tonnes of organic residues per day. On top of that, the anaerobic wastewater treatment plant produces another 3350 m^3 of biogas per day. Together, this amount of biogas is equivalent to 8410 kg or 9834 L of light fuel oil per day, or 3106 tonnes of fossil fuel a year.

By harnessing both of its organic waste streams, contained in wastewater and organic solids, the company claims it is setting green energy and water purity benchmarks for food processing.