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## **WELTEC BIOPOWER builds a biogas plant in Finland**

**Finland relies on sustainable nutrient recycling for water protection**

**WELTEC BIOPOWER recently commissioned a biogas plant near Turku in the south-west of Finland, in which it cooperated with its long-standing Finnish partner, Doranova, to complete the project. This region of Finland is characterised by livestock farms and therefore the 250-kW plant runs entirely on liquid manure. The energy plant belongs to a group of three pig farmers.**

The orientation of environmental policy in Finland is increasingly based on sustainable nutrient recycling. Agriculture, in particular, plays a strategically important role in regions with intensive animal husbandry. While in other parts of the world manure and slurry are seen as waste, the Fins rely on the advantages of this so-called 'black gold'. Fertilisation with this organic substance improves the structure of the soil and increases the carbon storage in the ground.

Moreover, an upstream biogas process delivers climate-neutral energy and ensures even better plant availability of the fertiliser.

Both the farm structure and the location of the Finnish pig farmers presented an ideal setting for the new anaerobic digestion project. Currently, three fattening houses are being built in addition to the existing piglet production sites. In this way, some 40,000 t of pig manure are available as input material for the stainless-steel

digester, which has a capacity of 4,903 m<sup>3</sup>. Other substrates will not be used. The heat generated by the 250-kW CHP unit is used to preheat the liquid manure, which is first buffered in an upstream slurry pit.

To minimise the loss of heat in the harsh Finnish winter, WELTEC equipped the digester cladding with an extra-thick insulation layer. This will result in a more efficient digestion process. The fully automated biogas plant operation culminates



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in the separation of the digestate. By compressing the nutrients, the transportability is increased and this helps to balance any regional nutrient surpluses and reduce the entry of

these nutrients in the Baltic Sea and other bodies of water.

“Back in 2013, we received the ‘Baltic Manure Handling Award’ in Helsinki in recognition of our biogas technology

to reduce the accumulation of nutrients close to waters”, Hajo Schierhold, Head of Sales at WELTEC, told Stainless steel World and went on to add: “We emphasise individual engineering and a high technical standard. This is something our customers greatly appreciate.”

By using its accumulated knowledge and biogas technology in this way, WELTEC BIOPOWER is helping to make sure that Finland reaches its recycling target. By 2025, 50% of the approximately 17.3 million tons of animal dung are to be processed. Apart from the energy production, this will cover more than three quarters of the phosphorus required for arable farming. “Such efficient nutrient recycling effectively prevents the eutrophication of the water system and eliminates the need for elaborately produced artificial fertilizer”, says Mikko Saalasti, Head of the Biogas Department of Doranova. According to Saalasti, the use of nutrients from the black gold thus represents an essential step towards the improvement of all water systems in the country. In addition to water protection, the production of green power will also ensure climate protection.