

HUNTSTOWN biogas plant



Site:	Huntstown, Ireland
Construction period:	2018 / 2019
Substrate:	Hydrolysed (TPH) biowaste and kitchen waste
Fermenter:	4 x 4,900 m ³ steel
CHP:	2 x 2.4 MWel gas engine
Extras:	sand removal, cooling of input material, 2 buffer tanks, external gas storage.

The Huntstown biogas plant was built for the general contractor Jones Celtic BioEnergy in Dublin, Ireland. The plant is operated by Energia.

The anaerobic fermentation of 92,000 t/a of waste (42,000 t/a biowaste and 50,000 t/a organic waste from supermarkets and restaurants, as well as waste from the food industry) serves the purpose of power generation and the production of thermal process energy. The two different input substrate fractions/flows (MSW (Municipal Solid Waste) = biowaste and SSO (Source Sorted Organics) = kitchen waste) are treated in two separate lines. This presents a particular challenge, both technically and in terms of planning, since the construction field for this project is also extremely limited. In two autoclaves, the input flows are thermally hydrolysed under pressure. This hygienisation reduces the dwell time inside the fermenter (*the increase in temperature reduces the surface tension and water level (subcritical), aided by the organic acids; may serve as a solvent for the organic substances*). After sand removal and cooling, the process flows are temporarily stored. This is followed by two tall fermenters made of steel, a post-fermenter, a collective external gas storage, gas conditioning and two CHPs. Arithmetically speaking, 1,700 m³/h of biogas can be produced and converted into electricity here in the future. The plant is designed in such a way that each of the six elevated tanks can be used as main fermenter. This will come in useful during maintenance. Due to the high sand proportion in the input, a considerable amount of residue must be expected in the tanks. The scope of planning includes temporary sand extraction without complete tank emptying. The biogas plant was commissioned in 2019.

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Krieg & Fischer Ingenieure GmbH scope of performance:

basic evaluation, pre-planning, design planning, execution planning, tendering, assistance in awarding of contract, overall management of construction site, commissioning, operator training