



Krieg & Fischer Ingenieure GmbH

Biogas Plant VIERVERLATEN



Location:	Groningen/Vierverlaten, The Netherlands
Construction Period:	2012
Input:	Sugar beet, potato waste
Fermenter:	Glass coated steel tank, 4 x 4,610 m ³
Biomethane Production:	Biogas production: approx. 16.7 Mio m ³ /a converted to approx. 10.5 Mio m ³ /a of biomethane. The gas is treated by high pressure water absorption (DWW) to the required biomethane quality.
Special Features:	Waste digestion plant with 4 primary digesters and gas upgrading system including heat recovery, solid input device (buffer capacity for 200 m ³ solids) in combination with hopper feed pump, decanter for separating fermentation residues, emergency flare for combined combustion of biogas and biomethane, and automatic dosing of additives.

The VIERVERLATEN digestion plant is one of two Netherlands biogas plants built and operated by SUIKER UNIE GREEN ENERGY. Start-up was in 2012. Feedstock for the plant includes residues from the industrial processing of sugar beets and potato waste. Each year a total of 116,200 t of solid material is fed into the digesters producing 16.7 million m³ of biogas that is converted to 10.5 million m³ of biomethane. The gas is treated by high pressure water absorption (DWW) to the required biomethane quality (89 % Vol. biomethane). Any biomethane that does not meet the national natural grid requirements is recirculated back into the system for further purification, so the biomethane is not wasted. Process heat from this upgrading process is recovered and used to heat the digesters. Digestion takes place in four 20 m high upright primary digesters. Each one is equipped with a top mounted mixer. One secondary digester with double membrane gasholder roof serves as storage space for digestate and biogas. The plant also includes a decanter, an evaporation facility, and automatic dosing of additives. Two solid input devices (each with a buffer capacity of 200 m³) are used in combination with hopper feed pumps. Additionally two tanks (300 m³ per tank) allow the feeding of liquids into the digesters. Additives are automatically injected into the digestion process to stabilise the process. The odour loaded air of the decanter hall is treated in a biofilter. Flocculants are added to the fermentation residues, these residues are then dehydrated and used as fertiliser.

Responsibility of Krieg & Fischer Ingenieure GmbH:
Conception, Pre-planning, Detailed and Final Engineering, Supervision of Construction, Start-up

Krieg & Fischer Ingenieure GmbH

Maschmühlenweg 10
D-37073 Göttingen – Germany
Tel.: +49 551 90 03 63 – 0
Fax.: +49 551 90 03 63 – 29
contact@KriegFischer.de
www.KriegFischer.de