



Sävsjö Biogas Plant, Sävsjö Biogas AB

Background

Sävsjö Biogas AB is a company, owned by Göteborg Energi and local farmers in the Sävsjö region. Sävsjö is a part of southern Sweden, and within a radius of 3 km is about 20 large farms with large livestock. Conditions for producing biogas from manure is very good hence the plant's location.

Solution

Sävsjö Biogas AB has built a new biogas plant in Sävsjö. The biogas plant receives mostly manure but some other organic waste products such as slaughterhouse waste and reject/waste water. The plant is also able to accept grass silage from the nearby region. The produced biogas is upgraded to vehicle fuel and distributed by a local filling station and by container trucks to the region's filling stations. The waste product (digestate), goes back to the farmers and is a very good fertilizer for the cultivation of food and feed.

Two lines for substrates

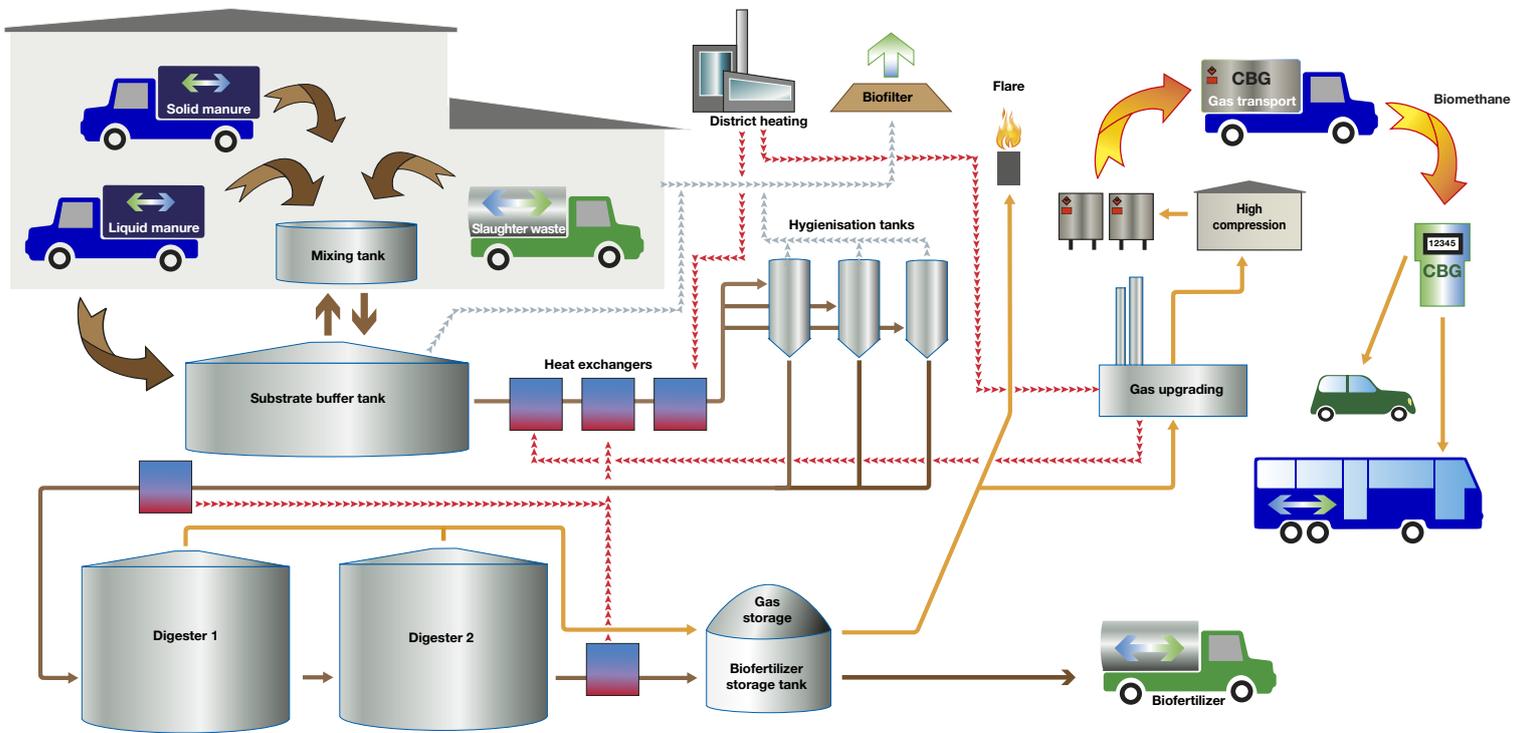
The plant has two lines for substrates.

- Liquid manure and
- Solid manure

Process

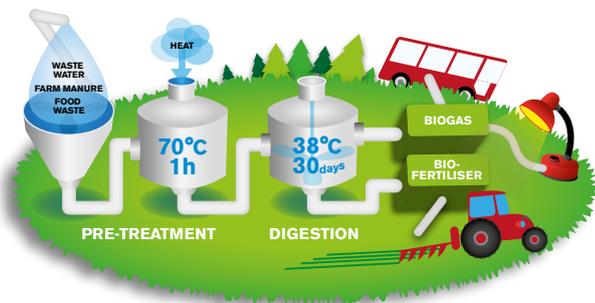
The substrates is mixed in a buffert tank and is pretreated in a pasteurisation step before the digestion. The pasteurization is done in batches of 70° C for one hour. The substrate is circulated over heat exchangers to achieve the correct temperature at 52°C (thermofil digestion).

The substrate is then pumped into the digesters. Digestion takes place in two reactors (6000 m³ and 3000 m³). In the digesters the organic substrate is converted to methane gas and carbon dioxide by different anaerobic bacteria.



The raw biogas is upgraded in a CApure® treatment plant. The CApure® plant upgrades the biogas to bio-methane, classified for use as vehicle fuel.

The digested substrate is stored in a combined storage tank for substrate and biogas. The digestate is collected by the same trucks delivering liquid manure and transported back to the farmers as rich fertilizer.



The bio-methane is compressed in the the CApure® plant and transferred in a pipeline to a high-pressure compressor plant. The HP-plant compresses the bio methane to 250 bar and fills gas containers and feeds the filling station with pure, "green" powerful vehicle fuel.

Result

Substrate wet ton volumes/year:

- Liquid manure 73 600 tons/year
 - Solid manure 6 700 tons/year
 - Slaughterhouse waste and waste water 6 100 tons/year
- In total 86 400 tons/year

Total biogas production: 3 300 000 Nm³/year

- Methane content ≥ 60%
- Biomethane production for vehicle fuel is approx 20 GWh/year or equivalent to 2,2 million litres of gasoline

Bio fertilizer production

- Approx. 84 000 ton/year of Bio fertilizer goes back into farming as a high quality fertilizer