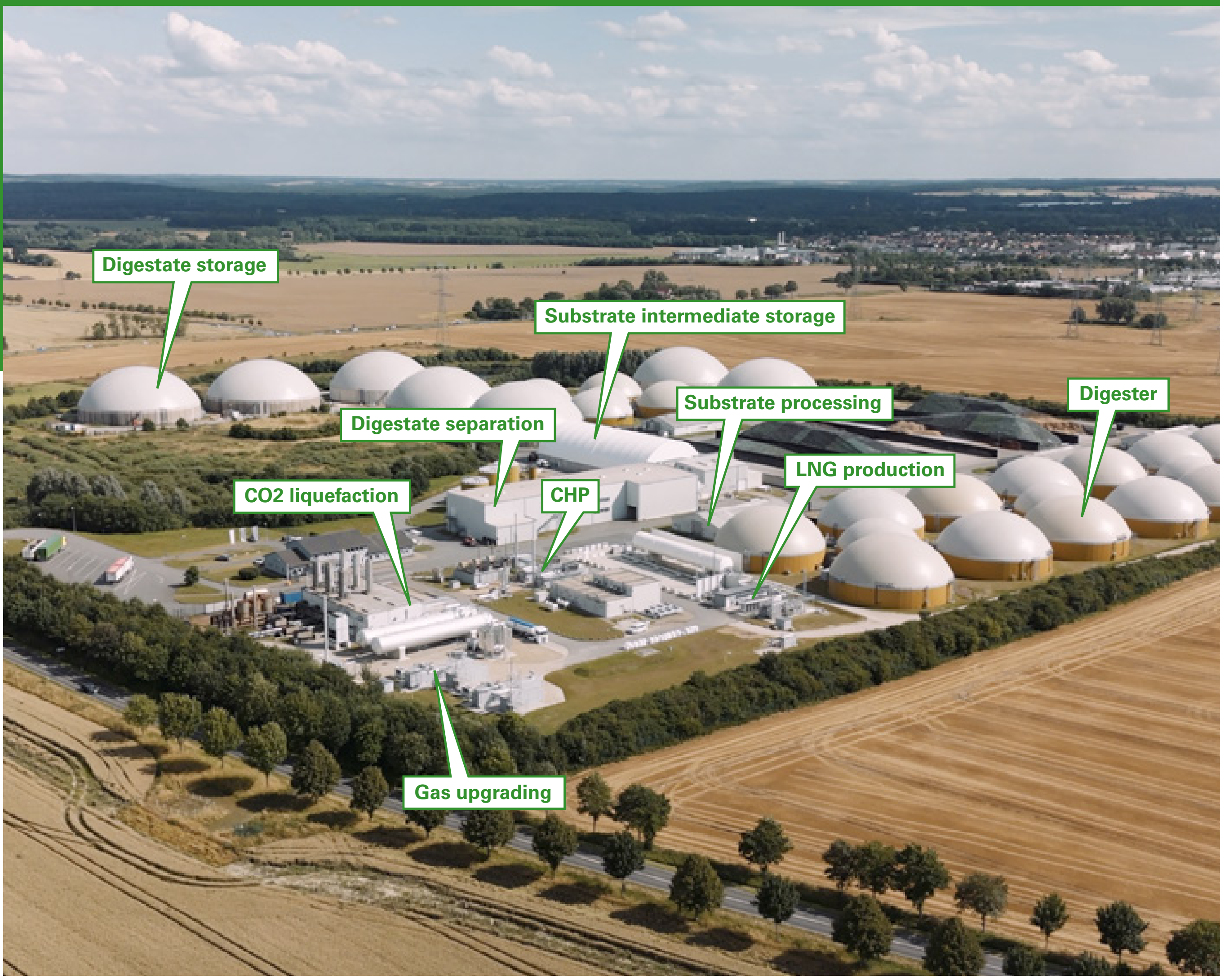
LEADING BY
EXPERIENCE AND INNOVATION

EnviTec Biogas

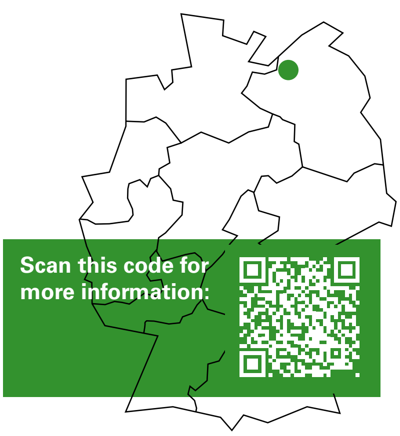
Germany's largest integrated bio-LNG plant in Güstrow

Including production of food-grade bio-LCO2

www.envitec-biogas.com



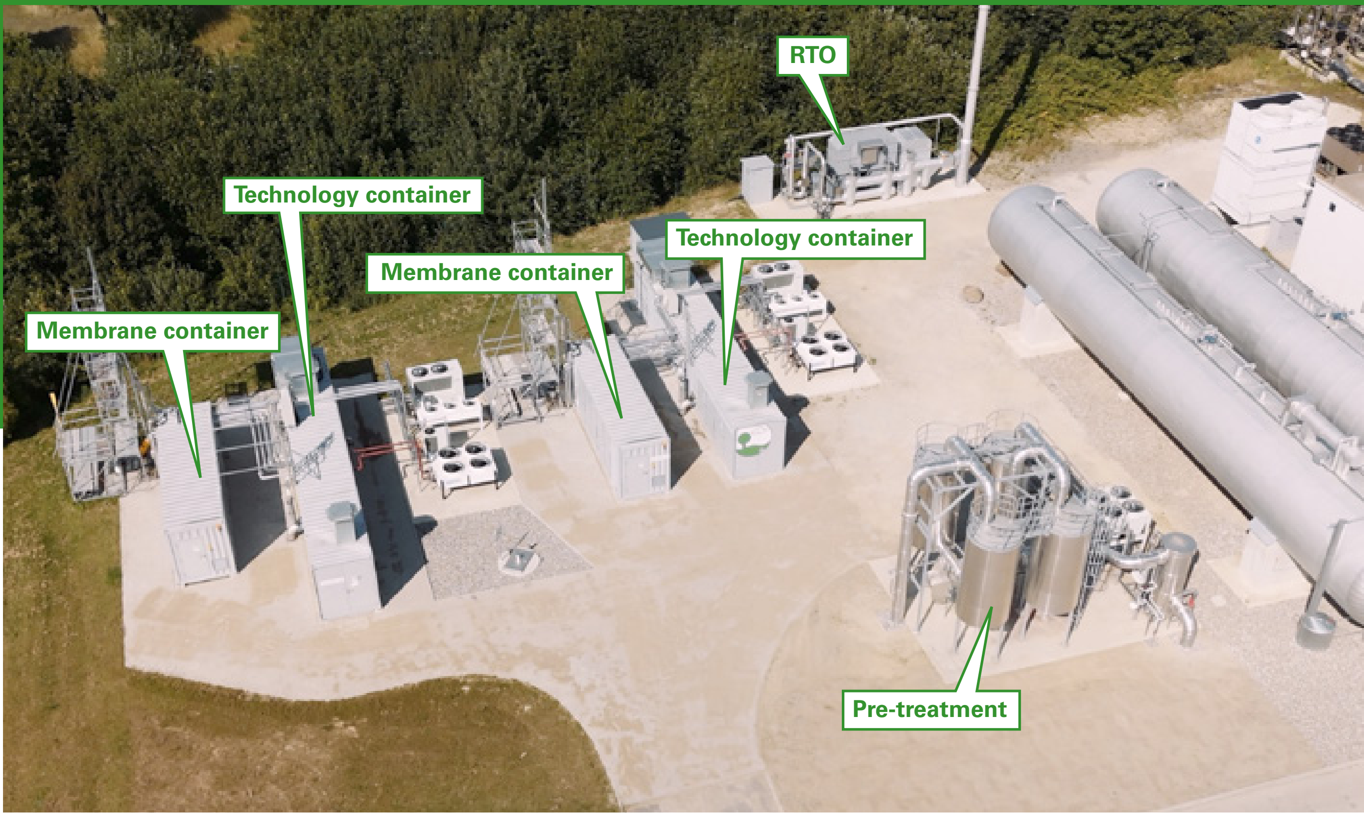
The BioEnergie Park Güstrow



Plant Profile

Location:	**18273 Güstrow/Germany**
Capacity:	**about 9,000 t Bio-LNG and 18,000 t Bio-LCO2 p.a., 3,1 MW_{el} from 5 CHPs**
In-service date:	**2009, conversion/upgrading in 2023**
Input materials:	**150.000 t p.a., mainly agricultural waste materials**
Special features:	**Germany's largest integrated bio-LNG plant (bio-LNG incl. bio-CO2 liquefaction plant)**

Germany's largest integrated bio-LNG plant covers the entire value chain on a total area of 17 hectares: Production of biogas, upgrading to biomethane as well as LNG and CO2 liquefaction. Customers include filling station operators and the food industry. In this way, we contribute to a considerable reduction in CO2 and particulate matter in the transportation sector and supply a renewable raw material, also for the chemical industry.

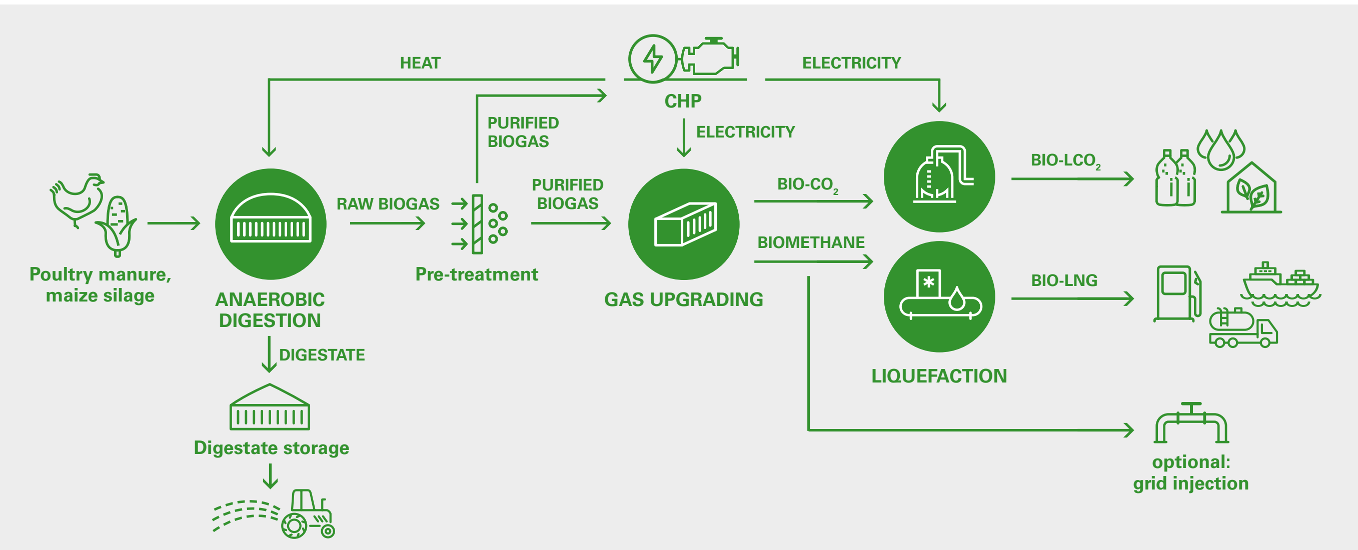


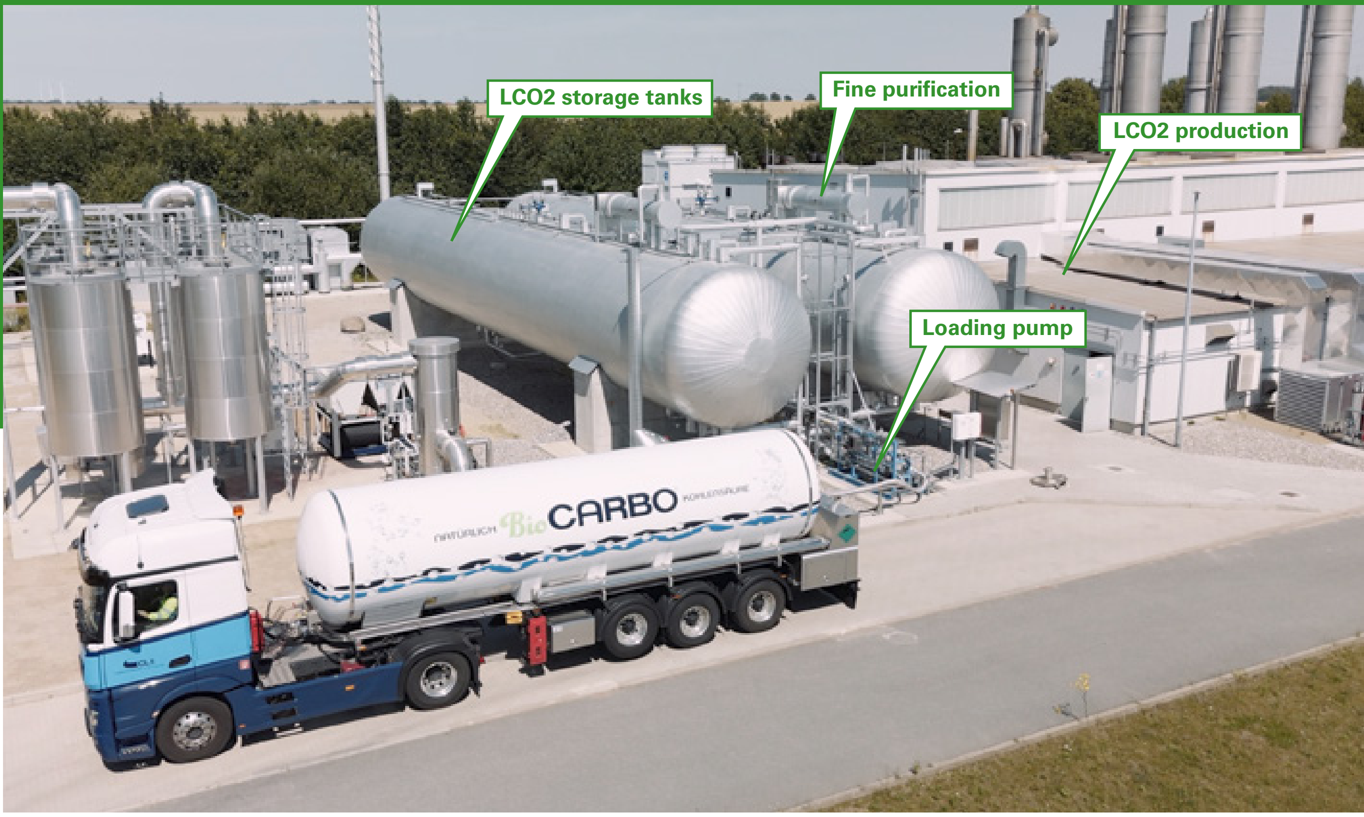
Biogas upgrading

For gas upgrading, we rely on Evonik's patented membrane technology. The jointly developed EnviThan process, which has been implemented in over 100 plants, converts raw biogas simply and efficiently into high-purity biomethane. Sulfur compounds are filtered out and methane and CO2 are separated from each other. The high-purity biomethane has the same chemical properties as natural gas and is liquefied into bio-LNG, but can also be fed into the natural gas grid if required. The separated bio-CO2 is also used and liquefied into bio-LCO2.

1,800
Nm³/h biomethane

1,600
Nm³/h bio-CO2





Bio-CO2 liquefaction

The CO2 captured during gas upgrading is also used. In this plant, it is compressed, liquefied, purified and stored as food-grade carbon dioxide until it is collected.

Possible applications:
– Carbonation in the beverage industry
– Cooling and freezing
– Production of plastics in the chemical industry
– Production of synthetic fuels, e.g. kerosene

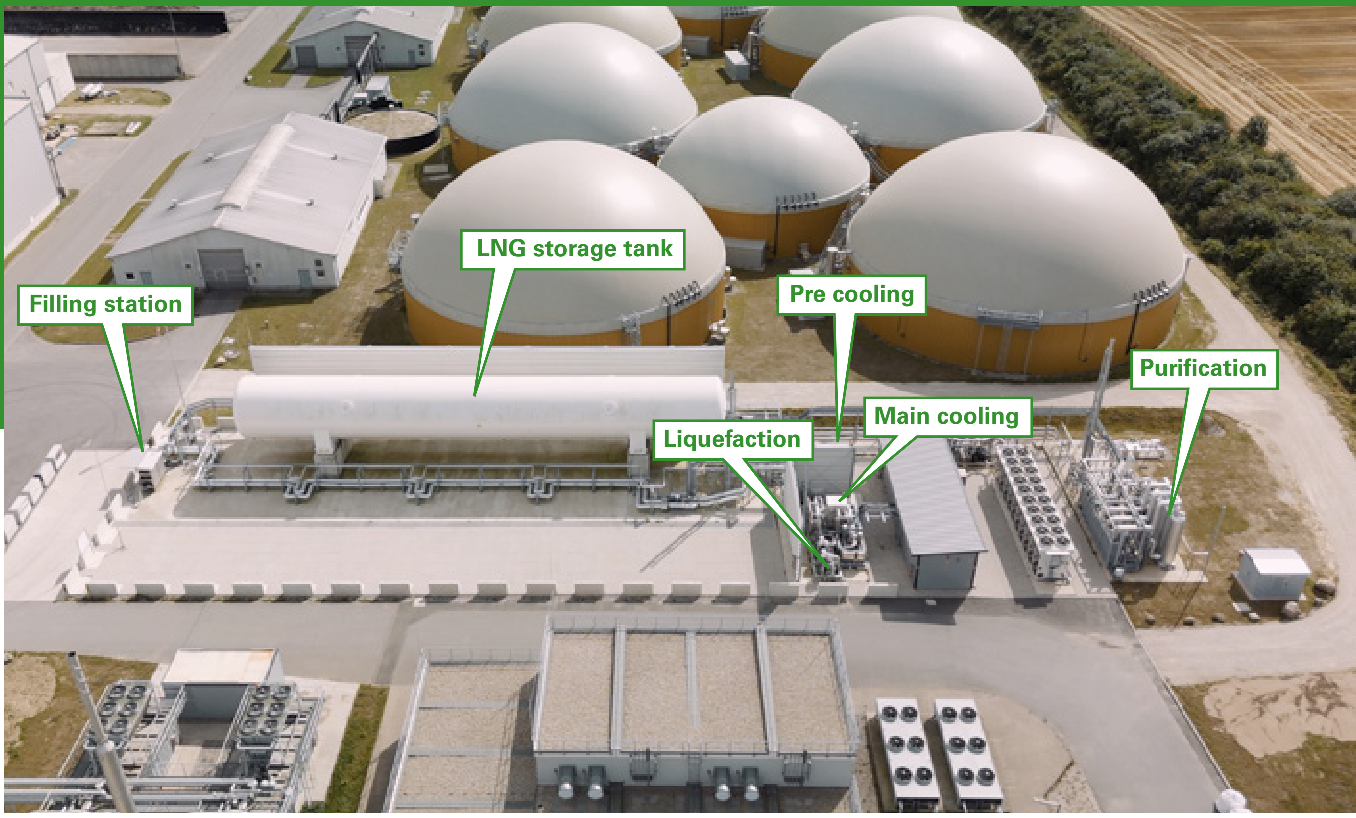
18,000

t/a bio-LCO2 in food quality

80%

annual requirement of classic mineral water in Germany

In the LCO2 plant, the carbon dioxide is compressed, liquefied and purified.



Bio-LNG production

The biomethane liquefaction system consists of four components: fine purification for the complete removal of moisture and carbon dioxide, liquefaction unit, storage tank and a transfer system for filling transport tanks for delivery to fueling stations. As a green fuel for trucks, airplanes and ships, bio-LNG makes an important contribution to the transport transition. It is the climate-neutral alternative to fossil LNG.

9,000
t/a bio-LNG

240
t LNG storage capacity

50+ mio.
truck kilometers

12,500
cruise ship kilometers

As a climate-neutral alternative to fossil LNG, the bio-LNG from Güstrow is regularly collected by tanker trucks and distributed to filling stations.

20+ years experience in building and operating biogas plants

700+ biogas plants

100+ biomethane plants

10+ years experience in EnviThan gas upgrading

87 biogas plants in own operation

97% average capacity utilization of own plants

700+ employees

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