Hitachi Zosen INOVA

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# First Project in Denmark: Farming Business Opts for Hitachi Zosen Inova Gas Upgrading Technology

*Hitachi Zosen Inova BioMethan is to deliver its first project in Denmark: The gas upgrading technology specialist has been awarded the contract to build a membrane plant that will upgrade 900 Nm³/h of raw biogas to produce biomethane for injection into the grid. The installation will be producing renewable natural gas by the end of the year.*

The project client is a local agricultural business near Vrå in northern Jutland, involved in both arable and livestock farming. Primarily using agricultural by-products such as slurry, pig manure and ground litter with straw, but also glycerine, olive pomace and other plant matter, he makes biogas which is then upgraded in an existing installation to make biomethane for injection into the local gas grid. Now that he has secured a supply of substrate to increase his production of biogas, the owner has decided to build a second upgrading plant.

The planned new plant to be built by HZI BioMethan (HZIB) is designed to treat 900 Nm³ of raw biogas per hour. The carbon dioxide ($CO_2$) in this biogas will be separated out by membrane-based gas permeation in 6-inch modules to produce a good four million Nm³ of biomethane/natural gas a year. The first gas is scheduled to be injected into the grid by the end of 2019. The current detail engineering phase will be followed by implementation planning, followed by works production. At the end of October, the plant will be erected on the client's site so that commissioning can be completed by the end of December.

**Demanding Project Delivery**

Some of the main reasons why HZIB was rewarded with this project were the rapid implementation as well as and the overhaul of the entire biomethane generation technology on the site. To meet this requirement, HZI BioMethan worked with its Scandinavian distribution partner, Nærenergi, a compressor specialist with expertise in the field of CNG technology and other parts of the renewable energy sector that has delivered various projects in Norway and Denmark.

HZI BioMethan's contract includes precleaning equipment, which is also to be installed upstream of the gas upgrading facility already in operation to augment and optimise its existing precleaning capabilities. Besides HZI BioMethan's tried and tested gas scrubber, which removes Ammonia ($NH_3$) and water-soluble VOCs in the precleaning phase, the solution will also enhance the process for recovering heat from the stream of raw gas at the precleaning phase, feeding it back into the fermentation process using a heat pump.

## Biogas Upgrading Helps Energy Transition

Denmark's goal is to transition the entire energy supply (electricity, heat and transportation) to renewable resources by 2050. While this will be done primarily using wind energy, treating biomass to produce biogas and biomethane is gaining in importance. Agriculture is a major industry in Denmark that provides plenty of substrate for fermentation in biogas plants. Upgraded to natural gas, this produces a fuel of unparalleled flexibility that can be used for anything from generating electricity and heat to fuelling vehicles. "By recycling biogenous residues, farmers can help achieve a successful energy transition, manage resources sustainably, and create an additional source of revenue for themselves," says Jan Ludeloff, HZI BioMethan's sales manager for northern Europe, who initiated the project in partnership with Nærenergi.

**About Hitachi Zosen Inova**
Zurich-based Hitachi Zosen Inova (HZI) is a global leader in energy from waste (EfW), operating as part of the Hitachi Zosen Corporation Group. HZI acts as an engineering, procurement and construction (EPC) contractor and project developer delivering complete turnkey plants and system solutions for thermal and biological EfW recovery. Its solutions are based on efficient and environmentally sound technology, are thoroughly tested, and can be flexibly adapted to user requirements. HZI's Service Group combines absolute commitment to research and development with extensive manufacturing and assembly capabilities and looks after your plant throughout its entire life cycle.
The company's customers range from experienced waste management companies to up-and-coming partners in new markets worldwide. HZI's innovative and reliable waste and flue gas treatment as well as biogas upgrading and power-to-gas solutions have been part of over 700 reference projects delivered since 1933. To find out more about HZI, please visit www.hz-inova.com.

**Hitachi Zosen Inova BioMethan GmbH**

HZI BioMethan is based in Zeven (Germany) and is one of the leading providers of gas upgrading equipment operating on the basis of two processes for separating out $CO_2$ from biogas, flue or exhaust gases. HZI BioMethan combines its expertise with many years of practical experience in numerous reference projects across Europe. The company is part of the HZI Group, augmenting its portfolio of biological energy recovery from waste.

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**Media contact**
Hitachi Zosen Inova AG
Manuela Höllinger
Head of Communication
Hardturmstrasse 127, CH-8005 Zurich
T +41 44 277 1457
manuela.hoellinger@hz-inova.com
www.hz-inova.com