Hitachi Zosen INOVA

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Europe's Energy Capital Relies on HZI BioMethan's Renewable Gas Upgrading Technology

Hitachi Zosen Inova BioMethan GmbH (HZI BioMethan) has been awarded the contract to build a biogas upgrading plant including the in-house gas scrubber and a desulphurisation and VOC filter system as part of a biogas project in Aberdeen. The installation is part of the city's new energy center and will be the first to feature the company's new membrane system. It is scheduled for commissioning at the end of 2019.

In the future, the city's food waste alongside crop fuels and waste products from agriculture will be processed at a wet fermentation facility. This will be linked to a system for upgrading the biogas to biomethane, a renewable fuel of natural gas quality that will be fed into the local gas supply grid. HZI BioMethan will design and deliver the plant technology for this process.

Improved Membranes Boost Upgrade Capacity

The gas is upgraded using membrane-based gas permeation to separate the carbon dioxide in the biogas from the methane. The process is ideal for treating the type of feed gases with a variable composition that usually results from the processing of waste and residues. The biomethane facility is geared to treating 1,200 Nm³/h of biogas. For the first time it uses new-generation membrane modules. The new 6" model achieves significantly higher treatment capacity than the former 4" one while remaining relatively compact. This allows the compact plant design to be retained even for systems with higher volume flows, as is the case with the Aberdeen project: the gas will be treated in a 40-foot membrane container and a 20-foot electrical container.

Project Developer Impressed by Quality of HZI BioMethan Technology

The contract was awarded by one of the leading companies in the UK Anaerobic Digestion industry, with more than ten years of experience in developing and running biogas plants. Besides powerful plant technology and an after-sales concept run via HZI's local subsidiary, what impressed the company most about HZI BioMethan was the high quality of its assembly, which the client was able to see first-hand on a visit to the production facility at the company's location in Zeven.

Following the project planning phase, currently under way, and the subsequent construction and procurement phase, plant assembly in the construction hall of HZI BioMethan is scheduled to start in June 2019.

Background to the Aberdeen Project

The biogas plant with the upgrading system is part of the new energy centre belonging to plans by the Aberdeen City Council for the Aberdeen Exhibition and Conference Centre (AECC) and The Event Complex Aberdeen (TECA). This £333m (€379.6m) project worked out in partnership with Henry Boot Developments has been designed for exemplary sustainability – in line with Aberdeen's position as European Energy Capital. It is due to be completed this year.

The concept for the entirely new project also includes a 200-bedroom hotel. In addition, the future conference centre will offer 10,000 seats, an increase of 110 percent compared to the current one. The AECC/TECA will be of economic and cultural benefit to Aberdeen, the North-east and Scotland as a whole by creating an international destination.

It is expected to attract major artists to the city as well as creating hundreds of jobs, and contributing an additional 4.5 million visitors, £113 million of visitor spend and £63m net GVA to the Scottish economy over the next ten years.

About Hitachi Zosen Inova BioMethan:

Hitachi Zosen Inova BioMethan GmbH (HZI BioMethan) is one of the leading providers of gas upgrading systems on the basis of two processes for separating CO_2 from biogenic gases.

The company was established in early 2015 following an asset deal to acquire MT-BioMethan GmbH, a pioneer in the production of biomethane using CO_2 separation and gas feed-in. HZI BioMethan combines its expertise with many years of practical experience underscored by numerous references in Europe. The company is part of the HZI Group, augmenting its portfolio of biological energy recovery from waste.

Pressureless amine scrubbing is an efficient, heat-led process that makes effective use of waste heat from CHP facilities or gas boilers. As a complement to this, HZI BioMethan also offers a power-driven process using membrane-based gas permeation in three stages. Both technologies deliver highest methane purity and minimize methane slip.

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