

Media Release, 10 January 2024

HZI to Deliver Further Renewable Gas Projects for the UK

Bio Capital has commissioned Hitachi Zosen Inova to deliver gas upgrading and CO₂ liquefaction systems

Following the announcement of the renewable CO₂ project at Granville Eco Park in Northern Ireland, UK company Bio Capital Ltd. is to deploy further enhancements at two more of their plants. The East London Biogas plant is adding biomethane production and gas-to-grid injection to the existing electricity generation. At a separate project in Norfolk, Bio Capital's Corbiere biomethane plant will in future also incorporate renewable CO₂ technology to produce food-grade carbon dioxide for sale in the UK market. Hitachi Zosen Inova will be supplying and delivering the necessary facilities for these projects in the coming year.

Zurich, Switzerland. Bio Capital owns and operates a number of anaerobic digestion plants throughout the UK for the production of renewable energy for domestic consumption. Now it is investing in plants that have been in operation for many years to upgrade them to meet future demand and requirements, optimising the UK's circular economy and using resources even more efficiently in the process. Following the contract to extend the Granville Eco Park plant in Dunganon, Northern Ireland, Bio Capital has strengthened its relationship with Swiss company Hitachi Zosen Inova (HZI) in Zurich. In the coming year, HZI will enhance the East London Biogas plant in Dagenham and extend the Corbiere Renewables plant in Fakenham following the recent signing of the relevant construction contracts.

State-of-the-Art Energy Production

The anaerobic digestion plant located in the Sustainable Industry Park in Dagenham, East London, has been in operation since 2012. Two years ago, it was extended to increase its treatment capacity to 70,000 tonnes a year, allowing the facility to process more food waste into green electricity and biofertiliser.

Now the facility is to be converted from electricity generation to also include biomethane production, using a gas upgrading system supplied by HZI: an M-Series gas upgrading unit with a treatment capacity of 1,200 Nm³/h raw gas. The process will entail separating the carbon dioxide (CO₂) contained in the biogas from the methane, which will then be fed into the natural gas grid. Deployed as a renewable natural gas substitute, methane can be used more flexibly than electricity, which increases the added value for energy consumers. First feed-in is scheduled for August 2024.

David McKee, CTO of Bio Capital, takes a look into the future: "Similar to what we're doing at our Granville plant in Northern Ireland, here too we're planning to retrofit liquefaction equipment to make good use of the by-product of the upgrading process." He also emphasises the common vision: "Like our partner HZI, we're not just interested in securing a supply of energy from renewable sources; we also want to maximise circularity to ensure the best possible use of resources. This streamlining of the plant and its resources will take us a step further along the path to meeting our net zero goal."

Carbon Dioxide Recycling in Fakenham

The Corbiere Renewables plant is located on the Raynham Farm Estate, around 40 kilometres northwest of Norwich. It recycles organic residues from farming into biogas, which is converted into biomethane and fed into the gas grid. In turn, the farm creates biofertiliser to use in the production of crops. This re-use of valuable biofertilisers has already reduced the use of chemical fertilisers by 50 percent.

As with the Granville Eco Park plant, in the future Bio Capital will capture the carbon dioxide from the upgrading process to market it as a product gas for commercial use. As an expert in biogas

and CO₂ utilisation, HZI is building the necessary pipelines, a precleaning system and a liquefaction system with a capacity of about 750 kg of carbon dioxide per hour. The extension to the plant is scheduled for commissioning between December 2024 and February 2025.

Augmenting renewable technologies is an indispensable part of HZI's efforts to make the best possible use of biogenic resources and, at the same time, reduce the emissions of climate-damaging carbon dioxide and safeguard the supply of energy over the long term. "Existing plants also offer enormous potential," points out Fabio Dinale, Executive Vice President of Business Development at HZI. "For this reason, we've made it part of the focus of our product portfolio to offer operators appropriate solutions by future-proofing existing plants to meet our clients' future requirements. Recent orders for retrofits around biomethane and CO₂ liquefaction confirm that there is a growing need for these technologies." Even as engineering for East London and Corbiere gets under way, Bio Capital is already planning continued operation and technology upgrades at other biogas sites.

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Attachment

East London Biogas.jpg; caption: With a gas upgrading unit from HZI, the East London Biogas plant will also produce biomethane in the future (© Bio Capital Ltd.)

About Hitachi Zosen Inova

Zurich-based greentech company Hitachi Zosen Inova (HZI) is a global leader in solutions for energy transition and circular economy including Waste to Energy (WtE) and Renewable Gas (RG), operating as part of the Hitachi Zosen Corporation Group. HZI acts as a project developer, technology supplier and engineering, procurement and construction (EPC) contractor delivering complete turnkey plants and system solutions for thermal and biological waste recovery. Its solutions are based on efficient and environmentally sound technologies, are thoroughly tested, and can be flexibly adapted to customer requirements. HZI's Service Solutions Group combines its own research and development with comprehensive manufacturing and erection capabilities to provide support throughout a plant's entire plant cycle. HZI works for customers ranging from established waste management companies to up-and-coming partners in new markets. Its innovative and reliable solutions have been part of more than 1,600 reference projects worldwide. Find out more about HZI at www.hz-inova.com.

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