

Media Release, 23 January 2024

Less Is More: Biomethane Facility Scaled Back to Boost Performance

Wastewater association commissions Hitachi Zosen Inova with cutting-edge retrofit of sewage gas upgrading unit in Zuchwil

The body responsible for managing wastewater in the Solothurn-Emme area has commissioned Hitachi Zosen Inova to retrofit its membrane-based facility in Zuchwil, Switzerland. For nine years, sewage gas from wastewater treatment has been processed to make renewable biomethane, which is fed into the regional gas grid. To keep up with requirements, the plant's output is now to be increased by more than 15% – with fewer membrane modules.

Zuchwil, Switzerland: Since 2015, ZASE, the organisation in charge of managing wastewater in the Solothurn-Emme area, has been operating a gas treatment plant from Hitachi Zosen Inova (HZI) on the site of the wastewater treatment plant (WWTP) in Zuchwil. The facility processes the digester gas produced in the digestion tower by bacterial decomposition of the sewage sludge into biomethane, which is fed into the Regio Energie Solothurn grid as renewable methane. In addition to a service contract going back almost a decade, ZASE has now also commissioned the Zurich-based green tech company to convert the plant to increase its output in line with future needs.

Greater Capacity Despite Reduction in Number of Modules

ZASE's catchment area comprises 40 municipalities in the cantons of Solothurn and Bern. The acquisition of a major new customer has significantly increased the volume of wastewater that the WWTP processes, and with it the production of digester gas from sewage sludge. To maximise the use of the energy this sludge contains, HZI is increasing the capacity of the existing biomethane plant by installing new membrane modules, replacing the chiller and main compressor, and converting the control system.

The existing second-generation membrane modules will be completely replaced with modules of the same size of the new, highly efficient generation. Although fewer modules will be used in future, the plant's output can be increased to around 300 Nm³/h. This will involve replacing the chiller and the main compressor with new, more efficient models and adapting the control system in line with the increase in capacity.

"By retrofitting our plant, we can utilise our resources more efficiently and generate more energy for the local area," explains operations manager Marco Imbach. "And as some of the module slots are now free, we also have the option of further increasing capacity in the future."

"We're very pleased about this renewed vote of confidence from ZASE in our expertise and technology," comments Dr Benoît Boulinguez on the latest contract. Dr Boulinguez is managing director of the HZI facility in Zeven, northern Germany, which manufactures the HZI Group's gas upgrading systems. "In addition to stepping up the use of renewable energy to help achieve global decarbonisation and a secure, fossil-free energy supply, we can also contribute substantially to the success of the energy transition by making the best possible, long-term use of existing plants."

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Attachment: 1 image

Zuchwil.jpg; caption: Membrane-based plant at ZASE's WWTP in Zuchwil: The system is now being retrofitted to boost throughput and enable it to continue to meet current requirements

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.

Media Contact

Hitachi Zosen Inova AG
Corporate Communication
Hardturmstrasse 127, CH-8005 Zurich
com@hz-inova.com , www.hz-inova.com