



CALORIC builds pilot & demonstration plant for Electrochaea's innovative biomethanation process

Graefelfing, November 6, 2017 – CALORIC, one of the leading suppliers of skid mounted gas generation plants and gas processing plants, has won the international tender for engineering and construction of a biomethanation pilot & demonstration plant in Solothurn, Switzerland. For the methanation of carbon dioxide and hydrogen, microorganisms are used as biocatalyst.

Supported by the European Union's "Horizon 2020" research & innovation programme under grant agreement No 691797 and the Schweizerische Eidgenossenschaft under the contract number 15.0333, the STORE&GO project serves the purpose of demonstrating the technical and economic feasibility on industrial scale of a new Power-to-Gas (PtG) technology based on a patented biocatalyst solution invented by Electrochaea GmbH, Planegg. Based on Electrochaea's process, the biomethanation facility will be designed and built by CALORIC Anlagenbau GmbH for the installation in Solothurn, Switzerland. The methanation process is designed to use excess power from renewable energy sources to convert hydrogen (H₂) and carbon dioxide (CO₂) to synthetic natural gas (SNG) by a reaction that is biologically catalyzed by single-celled microorganisms, called *archaea*. The result is pipeline-grade renewable biomethane that can be injected into the gas grid.

With an expertise background of more than 500 realized gas processing plants worldwide, CALORIC engineers will design a skid-mounted processing plant which will meet both the sophisticated high-tech research requirements as well as the demands for a unit at a commercial scale. The plant will consist of several skids, a vertical bioreactor and a control room container, all designed to fit into a compact area as provided by Regio Energie Solothurn. Developed in tight collaboration between CALORIC engineers and the Electrochaea Team, the pilot plant is designed to allow flexible operation within a wide range of capacities, taking into account its demonstration purpose, but also focusing on modularization and standardization. This will enable the adaptation to a higher hydrogen input without major changes at a later stage.

A key factor of the PtG pilot plant is its modular design concept. This allows the fully pre-fabrication of skids in CALORIC's factory site and includes fabrication, assembly, painting and cabling as well as testing of all components. The plant will be commissioned onsite under the supervision of CALORIC's erection master in the middle of 2018.

About Caloric Anlagenbau GmbH:

CALORIC is one of the leading companies worldwide for providing customized gas generation and gas treatment solutions. CALORIC's product and service portfolio includes the development, -planning and construction of gas generation and incineration plants for chemical and pharmaceutical industries as well as pilot and demonstration plants, gas purification plants, waste heat management systems and related engineering services. Since the foundation in 1965, CALORIC has constantly extended its know-how concerning process technologies. As of today, more than 500 plants have been built and installed worldwide. Managing Directors: Dr. Florian von Linde (CEO) and Dr. Peter Neumann.



About Electrochaeta GmbH:

On the basis of biocatalysis, Electrochaeta offers a power-to-gas key technology which has been patented internationally. It cost-effectively recycles CO₂ and simultaneously produces storable and usable biomethane from surplus electrical energy. The first industrial scale plant operates successfully in Denmark. Plants of more than one gigawatt of capacity are targeted by 2025. 20 employees work for Electrochaeta in Denmark and at the head office in Munich. CEO is Mich Hein.

Picture material:

- View of the future biomethanation plant at the Aarmatt site in Zuchwil, CH, with the existing Hybridwerk facility and its 3 heat storage tanks in the background. ©Regio Energie Solothurn, baderpartner Architekten
- Electron microscope photograph of the Electrochaeta archaea strain, a variant of *Methanothermobacter thermautotrophicus*. ©Prof. Andras Klingl, 2017

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Co-funded by
the European Union
under grand agreement
no. 691797

Supported by



Schweizerische Eidgenossenschaft
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Under contract number 15.0333