



Joint Press Release
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Windgas for the energy transition: Uniper lays cornerstone for methanation plant

- **Expansion of existing power-to-gas plant in Falkenhagen, Germany**
- **Sector coupling for renewable electricity through conversion to methane**
- **Part of the European STORE&GO research project**

The successfully tested power-to-gas plant in Falkenhagen is entering its next phase with the expansion of a methanation plant. The current plant already has the capability to feed small amounts of pure hydrogen (so-called "WindGas") directly into the natural gas network. The new methanation plant will additionally be able to convert hydrogen into methane using CO₂. This methane is synthetic natural gas, which can be transported from reservoirs and pipelines in unlimited amounts and stored in the existing natural gas infrastructure. In this way, it enables the storage of large amounts of energy that can be used in various sectors e.g. in the heating market, in industry, in mobility and in power generation, anywhere and at any time. It can also be used as backup whenever solar and wind power is not available in the necessary amounts. The plant is scheduled to be completed in the spring of 2018.

With the successful operating phase of the existing demonstration facility, which was launched in August 2013, Uniper has proven that with the aid of power-to-gas technology, surplus wind power can be converted into hydrogen and fed into the regional natural gas network. The power-to-gas plant has an output of two megawatts and generates 360 cubic meters of hydrogen per hour. Falkenhagen in Brandenburg is an ideal location, owing to its high wind generating capacity and the well-developed power and gas infrastructure already in place.

The new methanation plant will be built right next to the power-to-gas plant and consists of several components: two different prototype catalytic reactors for methanation are being installed and will be tested during the project. Up to 57 Nm³/h SNG (volumetric flow of synthetic natural gas) will be produced – an output equivalent to approx. 600 kWh per hour. In addition, the heat generated during conversion will be supplied to a nearby veneer plant.

"Power-to-gas is one of the key technologies for the energy transition. In Falkenhagen, we have developed this technology to the point of commercial viability. Renewable energy is being converted into windgas, which can be used in a wide variety of ways – and will soon be made available through methanation. Large-scale deployment is currently hampered, however, by the lack of a regulatory framework that needs to consider the role of storage technologies so that the requisite integration of renewables through power-to-gas can soon start moving forward," says Eckhardt Rümmler, responsible for innovations on the Uniper board.

Uniper is building and operating the new plant together with thyssenkrupp Industrial Solutions, the German Gas and Water Industry Association (DVGW) and the Karlsruhe Institute of Technology (KIT). thyssenkrupp and KIT are designing the reactors for methanation and KIT is also providing scientific assistance to the project over the planned 24-month operating phase. The DVGW, represented by DVGW Research Center at Engler-Bunte-Institut of Karlsruhe Institute of Technology (KIT), is responsible for overall coordination of this European project.

Prof. Dr.-Ing. Thomas Kolb, KIT Karlsruhe Institute of Technology, DVGW Research Centre at Engler-Bunte-Institute of KIT: "Power-to-gas technologies and natural gas infrastructure are indispensable elements of the energy supply of the future for Germany and Europe."

Dr. Ralph Kleinschmidt, Head of Technology & Innovation at thyssenkrupp Industrial Solutions AG: "From today's perspective, gas storage systems are the only technology available for storing large amounts of energy from wind power over a period of several months. In the future, we will be able to use industrial emissions or CO2 from the atmosphere for methane recovery. The power-to-gas facility in Falkenhagen is a crucial step toward an industrial use of this technology."

Dr.-Ing. Klaus Freytag from the Ministry of Economic Affairs and Energy and Torsten Uhe, county commissioner for the County of Prignitz as well as guests from the political, scientific and business communities participated in the cornerstone laying ceremony moderated by Dr. Axel Wietfeld, Managing Director of Uniper Energy Storage.

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About Uniper

Uniper is a leading international energy company with operations in more than 40 countries and some 13,000 employees. It focuses on the safe delivery of energy and related services. Its activities include electricity generation in Europe and Russia as well as global energy trading. Uniper operates gas storage facilities in Germany, Austria and the UK, and plays an important role in the safe and flexible delivery of natural gas. Uniper is one of the first companies to be involved in the field of power-to-gas and operates demonstration facilities in Hamburg, Reitbrook and Falkenhagen. Uniper is headquartered in Düsseldorf, Germany.
www.uniper.energy

About thyssenkrupp Industrial Solutions

The Industrial Solutions business area at thyssenkrupp is a leading partner for the engineering, construction and service of industrial plants and systems. Based on more than 200 years of experience we supply tailored, turnkey plants and components for customers in

the chemical, fertilizer, cement, mining and steel industries. As a system partner to the automotive, aerospace and naval sectors we develop highly specialized solutions to meet the individual requirements of our customers. More than 21,000 employees at over 70 locations form a global network with a technology portfolio that guarantees maximum productivity and cost-efficiency.

www.thyssenkrupp-industrial-solutions.com

About the DVGW, the Deutscher Verein des Gas- und Wasserfaches e.V. (German Gas and Water Industry Association)

The German Gas and Water Industry Association, eV. (DVGW) lends assistance to the gas and water supply sector with a focus on safety, hygiene and environmental protection. Together with its more than 13,600 members, the DVGW develops the generally accepted technical regulations for gas and water services. The association initiates and supports research projects and provides training across an entire range of topics relating to the gas and water sector. In addition, it operates a testing and certification program for products, personnel as well as businesses. The DVGW's technical regulations serve as the basis of technical self-management and accountability for the gas and water industry in Germany. They guarantee the safe supply of gas and water at the highest international standards. The non-profit association was founded in 1859 in Frankfurt am Main. The DVGW is self-funding and non-partisan. The research activities are decentral organized. The research facilities of DVGW like DVGW Research Center at Engler-Bunte-Institut of Karlsruhe Institute of Technology (KIT) connect scientific expertise and cooperation with academia with the practical aspects of gas and water industry.

About KIT, the Karlsruhe Institute of Technology

Karlsruhe Institute of Technology (KIT) – The Research University in the Helmholtz Association – pools its three core tasks of research, higher education, and innovation in a mission. With about 9,300 employees and 25,000 students, KIT is one of the big institutions of research and higher education in natural sciences and engineering in Europe.

www.kit.edu

About STORE&GO

The international project STORE&GO was launched in 2016 as part of Horizon 2020, the European Union's research and innovation program. The focus of research is on the production of renewable gases via methanation, then storing them on an industrial scale for the purpose of enabling cost-effective operations. In addition to the technological issues involved, economic and legal concerns are also addressed. Research is carried out using three different power-to-gas concepts at three sites in Germany (Falkenhagen, Brandenburg), Italy (Troia, Apulia) and Switzerland (Solothurn). The project consortium is comprised of 27 partners from six European countries. The STORE&GO project is scheduled to run for a period of four years (2016-2020) with a total budget of approx. 28 million euros, of which approx. 18 million euros will be funded by the EU.

http://cordis.europa.eu/project/rcn/200559_en.html or <https://www.storeandgo.info/>



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