



Joint Press Release
May 9, 2018

Methanation plant in Falkenhagen opens – important step for a successful energy transition

- **Successful completion to expansion of existing power-to-gas plant in Falkenhagen, Germany**
- **Sector coupling for renewable electricity through conversion to synthetic natural gas begins**
- **European research project STORE&GO enters next phase**
- **Start of 24 month research operations**

As part of the international STORE&GO research project, opening ceremonies were held today for the methanation plant expansion to the existing power-to-gas facility in Falkenhagen. While the current facility feeds pure hydrogen (so-called “WindGas”) directly into the gas grid, the new methanation plant provides for the generation of “green” methane. In this second stage, hydrogen from regenerative energy sources is converted into methane (CH₄), i.e. synthetic natural gas, using CO₂ from a bio-ethanol plant. This constitutes an important contribution to the success of the energy transition, because green methane in contrast to green hydrogen can be used in a wider variety of ways. It can be made available to a variety of markets, such as the manufacturing sector, the electricity, and heating market as well as the mobility sector. Moreover, it provides for unrestricted use of the natural gas infrastructure, including for transport and storage. This stored energy is then available as backup whenever there is an insufficient supply of solar and wind power.

The STORE&GO project brings together 27 partners from six countries to explore the opportunities for integrating power-to-gas applications into the European energy network and, in particular, to encourage the methanation of hydrogen as an important component of the energy transition. The wind-to-gas pilot plant “WindGas Falkenhagen” was constructed in 2013 to store wind energy in the natural gas grid. The cornerstone for the methanation plant was laid in July 2017, and additional essential components were put in place directly alongside the existing facility. All work was completed on schedule. The methanation plant produces up to 57 m³/h of SNG (synthetic natural gas, at normal pressure and temperature), which equates to an output of 600 kWh/h. By comparison: The same amount of energy could heat a 50-m² apartment for a month. Moreover, the heat generated by the process is used by a nearby veneer plant.

The innovative, commercial scale facility was created in cooperation with the partners thyssenkrupp Industrial Solutions, the research center for the German Association for Gas and Water (DVGW), and the Karlsruhe Institute of Technology and will be in operation for analysis over the next 24 months. Dr. Christian Ehler, member of the European Parliament, is serving as sponsor to the project.

Dr. Christian Ehler (EPP/CDU), European Parliament member for Brandenburg, comments: “I am very pleased to assume the role of sponsor for this forward-looking and innovative European research project in the energy sector, ‘STORE&GO,’ at the technology hub in Falkenhagen. By connecting to the regional natural gas grid, the power-to-gas project was perfectly suited to sound out the technical and regulatory challenges in building and operating storage facilities. It gives me great pleasure to see how Uniper continues to attach so much importance to the role played by power-to-gas. CO₂-neutral gas can make a decisive contribution to achieving Europe’s de-carbonization and energy goals.”

Eckhardt Rümmler, Uniper board member responsible for innovation, comments: "Without expanding options for long-term storage, the energy revolution will fail. With the launch of the methanation plant, an expansion to our successfully tested power-to-gas facility, we are demonstrating that the technology is ready to produce green gas from renewable forms of energy. This allows us to integrate renewables into the energy system so that they can be utilized in new applications. Now it's up to policy makers to make adjustments to the legal environment in such a way so that power-to-gas facilities will at last be able to operate profitably at a commercial scale."

Professor Thomas Kolb from the Karlsruhe Institute of Technology says: "Power-to-gas technologies and natural gas infrastructure are indispensable elements of the energy supply of the future for Germany and Europe. I am pleased that the new facility utilizes a catalytic honeycomb reactor developed in Karlsruhe to provide for adaptable methanation on a demand basis."

Helmut Knauthe, Chief Technology Officer, thyssenkrupp Industrial Solutions AG, comments: "Power-to-gas is one of the key technologies for the energy transition. Today's opening marks a significant step on the road toward industrial use. In order to further increase cost efficiency, we are focusing on opportunities for methanation at facilities like this. Moreover, going forward we will be able to use industrial emissions for methane recovery."

Michael Riechel, President of DVGW, says "Gas is an ideal partner for the climate-friendly energy system of tomorrow. And power-to-gas technologies will play a key role. They are the central element for coupling together the electric and gas infrastructure, thereby facilitating the integration of renewable forms of energy into cutting edge delivery systems. CO₂-free generation and use of gases makes it possible to increase the share of renewable forms of energy in the energy stream. But for power-to-gas to achieve its potential as the "green battery" for the energy transition, regulatory hurdles will have to be eliminated and the facilities given equal access to the marketplace."

Attending the official opening ceremonies were Dr. Christian Ehler, MEP, and Eckhardt Rümmler, Chief Operating Officer at Uniper SE, as well as Jochen Homann, President of the Federal Network Agency for Electricity, Gas, Telecommunication, Mail, and Railways, Michael Riechel, President of the DVGW, Helmut Knauthe, Chief Technology Officer at thyssenkrupp Industrial Solutions, Prof. Dr.-Ing. Thomas Kolb from KIT, Dr. Axel Wietfeld, Managing Director, Uniper Energy Storage, along with guests from the worlds of politics, science, and business.

Your contacts for further information:

Uniper SE
Dr. Nicole Karczmarzyk
+49 211 4579 3652
nicole.karczmarzyk@uniper.energy

thyssenkrupp Industrial Solutions AG
Isabel Reinhardt
+49 201 844-535472
isabel.reinhardt2@thyssenkrupp.com

DVGW
Daniel Wosnitzka
+ 49 30 794736-64
wosnitzka@dvgw.de

KIT
Monika Landgraf
+49 721 608-47414
presse@kit.edu

About Uniper SE

Uniper is a leading international energy company with operations in more than 40 countries and some 12,000 employees. It focuses on the safe delivery of energy and related services. Its primary 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 engineering, construction, and servicing of industrial plants and systems. Drawing 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 that meet the individual needs of our customers. More than 21,000 employees at over

100 locations form a global network with a technology portfolio that guarantees maximum productivity and cost-efficiency.

www.thyssenkrupp-industrial-solutions.com

About DVGW, German Association for Gas and Water e.V.

The Deutscher Verein des Gas- und Wasserfaches e.V. (German Gas and Water Industry Association, DVGW) promotes the gas and water sector, focusing in particular on safety, hygiene, and environmental protection. Together with its more than 13,600 members, the DVGW develops generally recognized 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 rules 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. Research is organized on a decentralized basis at DVGW. The research institutions of the DVGW, which include the Engler Bunte Institute (DVGW-EBI) at the Karlsruhe Institute of Technology, combine scientific expertise and university partnerships with practical application in the gas and water sector. The DVGW-EBI is the local partner in Falkenhagen and is responsible for overall project coordination.

About KIT, the Karlsruhe Institute of Technology

Being „The Research University in the Helmholtz Association“, KIT creates and imparts knowledge for the society and the environment. It is the objective to make significant contributions to the global challenges in the fields of energy, mobility and information. For this, about 9,300 employees cooperate in a broad range of disciplines in natural sciences, engineering sciences, economics, and the humanities and social sciences. KIT prepares its 26,000 students for responsible tasks in society, industry, and science by offering research-based study programs. Innovation efforts at KIT build a bridge between important scientific findings and their application for the benefit of society, economic prosperity, and the preservation of our natural basis of life.

www.kit.edu

About STORE&GO

The international STORE&GO project was launched in 2016 as part of Horizon 2020, the European Union's research and innovation program. Research is focused on the production of renewable gases via methanation and 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 DVGW, represented by the DVGW research center at the Engler Bunte Institute at the Karlsruhe Institute of Technology (KIT), is the coordinator for STORE&GO. 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

<https://www.storeandgo.info/>



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

This press release may contain forward-looking statements based on current assumptions and forecasts made by Uniper SE Management and other information currently available to Uniper. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. Uniper SE does not intend, and does not assume any liability whatsoever, to update these forward-looking statements or to modify them to conform with future events or developments.