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Joint press release

Into the future with NATURAL GAS: Gas industry presents innovative technologies for more climate protection

Wintershall and Zukunft ERDGAS launch new event format for natural gas with the "Zukunftswerkstatt ERDGAS – Marketplace for Innovations"

Berlin, 22 November 2018. As a provider of innovative solutions and new technologies, the natural gas industry will play a key role in shaping the future energy system. This was demonstrated by 16 future-oriented projects from the academic and business sectors that were presented in Berlin today, Thursday, 22nd November 2018, as part of the Zukunftswerkstatt ERDGAS event. The Zukunft ERDGAS industry initiative and Wintershall, Germany's largest internationally active gas and oil producer, hosted the event ahead of the prize ceremony for the Innovation Award of the German Gas Industry. The innovative projects were introduced to the participants by means of speed dating, which they then discussed during an interactive panel discussion.

"The concepts and projects presented today make me very optimistic about our energy future. Natural gas is not only climate-friendly but also versatile, and can be used in all sectors. If you want climate protection today – and that at an affordable price, you cannot ignore natural gas. The gas industry is innovative and provides answers on how a low-emission future doesn't have to remain a dream but can become reality. I'm therefore convinced that gas will continue to grow in importance," said Timm Kehler, CEO of Zukunft ERDGAS, at the event.

"We, the gas industry, are the reliable partner in the energy system. And that has been the case for decades," said Thilo Wieland, Executive Board Member of Wintershall. Thinking in long cycles and shaping changes that happen not in quarters but in decades, he added, is a major strength of the gas industry. "The sustainable success of this energy source is based on the endurance of our industry. Natural gas is more than an interim solution for our energy system. Natural gas is and will remain part of the overall solution."

Natural gas – in future also without CO₂

Against the backdrop of the currently discussed coal phase out, the industry at the Zukunftswerkstatt event showed that it has not only the infrastructure and know-how but also the innovative power to make an important contribution to reducing CO₂ emissions. Gas offers solutions for all sectors and a wide range of applications. Groundbreaking, for example, is the decarbonization of natural gas and so-called green gas, which was the focus of various projects at the Zukunftswerkstatt event. The industry is thus demonstrating that natural gas also offers solutions for a carbon-neutral future. While the combustion of natural gas does produce CO₂, it

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does so with a significantly smaller carbon footprint than other conventional energy sources.

The approach perfected by researchers from Karlsruher Institute of Technology (KIT) aims at completely avoiding this. In the methane pyrolysis process, a liquid metal reactor produces hydrogen from natural gas. Instead of releasing carbon dioxide, solid carbon is generated, which in turn can be used by the industry. Other projects presented how carbon dioxide can be separated from methane and then stored.

An integral part of the heating market – and even more efficient in future

Natural gas is already the source of energy preferred by the Germans in their domestic boiler rooms: half of all German households are heated with natural gas. In order to heat homes in an even more environmentally friendly and efficient manner in future, appliance manufacturers are constantly developing new heating technologies. For example, boostHEAT from Nuremberg combines a gas-fired condensing boiler heating system with a gas heat pump and thus achieves efficiencies of 200 percent, which is about twice as much as conventional gas condensing heating systems.

But natural gas is also an indispensable partner for renewable energies in innovative district concepts, such as those implemented by the Stadtwerke Augsburg municipal utility company: here the surplus solar power is converted into gas, stored and then used in the utility's own combined heat and power plant as required.

A climate-friendly alternative: Gas in shipping and heavy goods transport

No less effective is the approach conceived by the Meyer Werft shipyard company to power the AIDAnova cruise liner. It is the world's first ship to be fully powered in port and at sea with LNG. This allows to almost completely avoid the emissions of particulate matter and sulfur dioxides. The emissions of nitrogen oxides and carbon dioxide are also significantly reduced – a real milestone in cruise shipping.

Natural gas also offers environmentally friendly solutions for urban public bus services, as MAN demonstrated at the Zukunftswerkstatt event with its gas-powered Lion's City Bus. The innovative drive concept combines a low-consumption natural gas combustion engine with an electric motor. Using recovered braking energy saves fuel, while the stop-and-start function also enables quiet and emission-free stopping phases. MAN is therefore setting new benchmarks for urban transport buses when it comes to efficiency and environmental friendliness.

About Zukunft ERDGAS e.V.

The Zukunft ERDGAS initiative has been established by the German natural gas industry. It represents the brand and the NATURAL GAS product to consumers, politicians and market partners. Together with its members, Zukunft ERDGAS is committed to exploiting the potential of the energy source and providing information about the opportunities and possibilities that

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NATURAL GAS offers for the energy transition and in the future. Zukunft ERDGAS is supported by leading companies in the natural gas industry. Industry associations and the heating appliance sector are also supporting the initiative as partners.

About Wintershall Holding GmbH

Wintershall Holding GmbH, based in Kassel, Germany, is a wholly owned subsidiary of BASF in Ludwigshafen. The company has been active in the extraction of natural resources for 120 years, and in the exploration and production of crude oil and natural gas for over 85 years. Wintershall focuses on selected core regions where the company has built up a high level of regional and technological expertise. These are Europe, Russia, North Africa, South America, and increasingly the Middle East region. The company wants to expand its business further with exploration and production, selected partnerships, innovation and technological competence. Wintershall employs about 2,000 staff worldwide from 50 nations and is now Germany's largest, internationally active crude oil and natural gas producer.

At the end of September 2018, BASF and LetterOne signed a binding agreement to merge their respective oil and gas companies, Wintershall and DEA (Deutsche Erdöl AG). Subject to regulatory approvals, the transaction is expected to close in the first half of 2019. Wintershall DEA would become the leading independent oil and gas producer in Europe. BASF and LetterOne are planning an initial public offering (IPO) for Wintershall DEA in the medium term.

Wintershall. Shaping the future.

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