Press release

Gasunie, TenneT and Thyssengas reveal detailed, green 'sector coupling' plans using power-to-gas technology

- **The electricity and gas grid operators are planning to build a 100-MW power-to-gas plant in Lower Saxony**
- **These new facilities are intended to couple the energy, transport and industrial sectors**
- **Power-to-gas can help stabilise the electricity grid, limit the curtailment of wind energy and reduce the future need for grid expansion**

Bayreuth, Dortmund, Hanover, 16 October 2018. The grid operators TenneT, Gasunie Deutschland and Thyssengas are getting down to business. They have put forward detailed plans for coupling the electricity and gas grids and advancing the energy transition. The three grid operators are planning to build a power-to-gas pilot plant in Lower Saxony; at an output of 100 megawatts, it will be the largest of its kind in Germany. Potential sites are located in the vicinity of the TenneT substations in Diele and Conneforde, which primarily collect and distribute offshore wind energy from the North Sea. The "ELEMENT ONE" pilot project will give the companies first experiences with power-to-gas facilities on an industrial scale. Starting in 2022, the pilot plant will be connected to the grid gradually. By converting green energy into gas, it will develop new storage capacities for renewable energies. The partners ultimately hope to achieve a comprehensive coupling of the energy, transport and industrial sectors. Gas that has been produced from green energy will be transported from the North Sea to the Ruhr region through existing pipelines, but that is not all. It could also be made available to the mobility sector through hydrogen filling stations and to industrial consumers through storage caverns.

Olaf Lies, the Minister of Environmental Affairs and Energy for Lower Saxony, commented on the project: "It is an extremely important signal for Lower Saxony as an energy state. The expansion of offshore and onshore wind energy is advancing. But we cannot think of the energy transition in terms of electricity only. Sector coupling is a crucial aspect of it. I am delighted that important players of the energy transition are taking steps in that direction now. That is the right signal. Some industrial companies are already working on power-to-gas technologies. We need to implement industrial policies that specify standards for the relevant facilities. That is happening in this case. There is great potential for development, especially when it comes to coupling the electricity and gas grids. The use of green hydrogen for transport, heating and industrial purposes also offers enormous opportunities. We must not be led to focus on electricity only. A wider perspective will enable us to implement a variety of new technologies and have a diverse range of companies working in the field."

The partnering organisations have already presented the "ELEMENT ONE" project to Thomas Bareiß (MP), the Parliamentary State Secretary at the Federal Ministry of Economic Affairs and Energy. He expressed great interest in the proposal: "I am convinced that the use of renewable energy in the form of hydrogen will constitute an important solution to major questions of the energy transition," Bareiß commented. He is an outspoken supporter of the initiative proposed by the three companies.

TenneT believes that there is great potential in power-to-gas technologies, as they can introduce a urgently needed level of flexibility into the power grid. “We need powerful storage technologies if we want to achieve our ambitious expansion target for renewable energy by 2030. The ability to store large volumes of renewable electricity will reduce the load on the power grid. That, in turn, helps us limit the expensive curtailment of wind turbines and make the power supply more reliable,” Lex Hartman, Managing Director of TenneT, commented. He added: “Storing more green energy also entails a reduced need for further grid expansion after 2030.” The innovative project is part of an extensive innovation programme by the transmission system operator. Its objective is to find ways of making the grid operations more flexible while maintaining reliability.

“Power-to-gas technologies are crucial if we want to achieve our climate targets for 2030 and 2050,” Jens Schumann, Managing Director of Gasunie Deutschland, emphasised. “Especially the concept of sector coupling – the intelligent, economical integration of gas, electricity, heat and transport infrastructures – offers immense potential that is yet to be unlocked. Power-to-gas technologies are extremely relevant in this respect, as they constitute a practical solution for connecting previously separate infrastructures.”

“This planned construction of a major power-to-gas plant also makes it clear that the energy transition must have an engineering dimension to succeed. The transition relies on technical innovation and a multisectoral search for viable engineering solutions. If we dare to join our technical expertise in a purposeful and focused way, we will succeed. We now need the right framework to apply our technical skills profitably,” Dr Thomas Gößmann, Chairman of the Management Board of Thyssengas GmbH, explained.

Background:
The availability of renewable energies to the grid is weather-dependent. To date, there are no technically and economically viable solutions for storing large amounts of electricity. Power-to-gas technologies can contribute to solving this problem. They convert renewable energy into gas (green hydrogen or methane) that is transported or stored in the gas grids. Once converted into gas, the renewable energy can be used in other sectors, which ultimately accelerates the energy transition.

About Gasunie Deutschland:
Gasunie Deutschland Transport Services GmbH is headquartered in Hanover. The company manages, operates and expands a long-distance transmission grid in Northern Germany that spans around 3,800 kilometres. On account of its geographical location and its total length of more than 15,500 kilometres, the Gasunie grid in the Netherlands and Germany functions as a gas hub for northwestern Europe. Gasunie Deutschland is a subsidiary of N.V. Nederlandse Gasunie. The transport facilities of Gasunie are a major part of the northern German gas grid. They make an important contribution to the reliable supply of natural gas to Germany and Europe.

About TenneT:
TenneT is one of the leading transmission system operators in Europe. With approximately 23,000 km of high-voltage and extra-high voltage lines in the Netherlands and Germany, we offer 41 million end users reliable and safe power supply around the clock. TenneT is expanding the northwest European energy market with about 4,000 employees as a responsible front-runner in its industry and is increasingly integrating renewable energy in the context of sustainable energy supply. **Taking power further**

About Thyssengas:
Thyssengas GmbH, headquartered in Dortmund, is an independent gas grid operator and one of Germany's leading gas transportation grid companies. In its heartland of North Rhine-Westphalia, it operates seven branch offices and a gas transportation grid that spans around 4,200 kilometres. This extensive, environmentally friendly transport system reliably moves up to 100 billion kilowatt hours of natural gas to distribution system operators, industrial companies and power stations.

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