

Press release

250-kilowatt electrolyser produces first hydrogen in Lingen

- **High-temperature SOEC electrolyser produces up to 7 kilogrammes of H₂ per hour**
- **Plant soon to fill pipeline for test operation of GET H2 TransHyDE**
- **Tests for pipeline transport and storage of hydrogen to start in 2024**

Essen, 27 September 2023

The GET H2 TransHyDE joint project based in Lingen has reached an important milestone: hydrogen was produced for the first time on the site of the RWE gas-fired power plant in Emsland (KEM) using a high-temperature solid oxide electrolyser (SOEC) from Sunfire. The electrolyser, with an output of 250 kilowatts (kW), is part of a test facility at which nine project partners are investigating how hydrogen can be safely and reliably transported and stored through pipelines.

The electrolyser, which is installed in an overseas container, can produce around 170 kilogrammes of hydrogen per day at full load. A day's production would theoretically be enough to power a car with a fuel cell engine for 17,000 kilometres. However, the hydrogen from the 250-kW plant in Lingen is needed for research purposes. It will be fed into a 130-metre-long test line (loop) as part of the GET H2 TransHyDE research project, where companies and research institutes are developing technologies for the optimal use of hydrogen.

Sopna Sury, COO Hydrogen at RWE Generation: “With the commissioning of this first electrolyser, RWE has officially started to produce hydrogen in Lingen. These 250 kilowatts of electrolysis capacity for the GET H2 TransHyDE research project are an important first step for us, and it will quickly be followed by others. In a few months, our 14-megawatt pilot electrolyser at the Lingen plant, our first one that will produce hydrogen on an industrial scale, will also go into operation.”

Nils Aldag, CEO of Sunfire: “Germany has set itself the goal of becoming the lead market for hydrogen technologies. To achieve this, we also need a strong domestic market where technology providers and customers move forward together. With our partner RWE, we are validating the next generation of electrolysers with high-temperature SOEC electrolysis. In parallel, we are building a pressurised alkaline electrolyser on an industrial scale in Lingen. This is how we are gathering experience and developing standards together.”

RWE

In the coming weeks, a piston compressor will be put into operation next to the 250-kW electrolyser. This will allow hydrogen to be compressed to the 58-bar of pressure required for pipeline transport. The first tests on the TransHyDE test pipeline will start at the beginning of 2024.

The companies Adlares, Evonik, Meter-Q Solutions, Nowega, OGE, Rosen and RWE, together with the DVGW Research Unit at the Engler-Bunte Institute of the Karlsruhe Institute of Technology and the University of Potsdam, are researching the infrastructure required for green hydrogen in the public space in the joint project GET H2 TransHyDE. The nine partners are gathering knowledge on how to transport hydrogen. To this end, they are setting up a test environment in which they are investigating how to measure the quality and quantity of hydrogen. They are also optimising compressor concepts and looking at how hydrogen affects materials. Other aspects are technologies for remote leakage detection and for pipeline inspection and maintenance.

TransHyDE is one of the German hydrogen lead projects funded by the Federal Ministry of Education and Research is to advance the implementation of the National Hydrogen Strategy. The Ministry is funding the project to the tune of 11.63 million euros.

GEFÖRDERT VOM



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RWE

RWE is leading the way to a green energy world. With an extensive investment and growth strategy, the company will expand its powerful, green generation capacity to 50 gigawatts internationally by 2030. RWE is investing more than €50 billion gross for this purpose in this decade. The portfolio is based on offshore and onshore wind, solar, hydropower, hydrogen, batteries, biomass, and gas. RWE Supply & Trading provides tailored energy solutions for large customers. RWE has locations in the attractive markets of Europe, North America, and the Asia-Pacific region. The company wants to phase out coal by 2030. RWE employs around 19,000 people worldwide and has a clear target: to get to net zero by 2040. On its way there, the company has set itself ambitious targets for all activities that cause greenhouse gas emissions. The Science Based Targets initiative has confirmed that these emission reduction targets are in line with the Paris Agreement. Very much in the spirit of the company's purpose: Our energy for a sustainable life.



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