

500 kg Hydrogen Storage for the Hydrogen Terminal at the Technical University of Braunschweig Research Center

- GKN Hydrogen delivers unique, safe and compact hydrogen storage system, based on metal hydride technology, with a capacity of 500kg for the **"Hydrogen Terminal" project**, funded by BMBF, the German Federal Ministry of Education and Research.
- The research project is a collaboration between the Steinbeis Innovation Center energyplus (siz energyplus) and the Technical University of Braunschweig.
- The storage units will be integrated into the university's innovation network, contributing to applied basic research and sector coupling.

Bonn / Radevormwald (DE), Pfalzen (IT), and Carlsbad (CA/USA):

GKN Hydrogen, a technology leader and manufacturer of energy and hydrogen storage systems based on metal hydride, has been awarded the contract to install two storage units with a total capacity of 500 kg of hydrogen. The GKN metal hydride storage, due to its nature, is the safest hydrogen storage in the world, storing hydrogen as a metal hydride, a solid, at low temperatures and pressures.

The storage units are scheduled to be integrated into the research environment of the Hydrogen Terminal at the Technical University of Braunschweig in December 2023 and gradually commence operations in 2024. Key components of the research project include:

- Hydrogen production, storage, and distribution,
- HRS -Hydrogen refueling stations for trucks
- Secure hydrogen supply for the fuel cell test benches at TU Braunschweig, the Lower Saxony Research Center for Vehicle Technology (NFF), and the Fraunhofer Project Center for Energy Storage and Systems (Fraunhofer ZESS)

The goal is also to use renewable energy to stabilize the power grid. Hydrogen is generated in an AEM Multicore electrolyzer from Enapter and transported to the metal hydride storage 900 m away via a pipeline.

Press Release

november, 16th 2023

Guido Degen, Chief Commercial Officer, GKN Hydrogen, on the successful commission: "We are proud to be part of this important and groundbreaking project. In discussions with the chair's responsible parties, we felt that our technology fits very well into the overall concept of the Hydrogen Terminal. We will all benefit from the experiences of this project and gain valuable insights into the efficient storage and use of hydrogen."

Prof. Michael Heere, Head of the Fuel Cell Systems and Drives Group: "At the research airport, we conduct basic research along the H₂ conversion and transformation chain. GKN Hydrogen's solution allows us to safely store a large amount of green hydrogen in a confined space and optimally use it for our research purposes. Storing hydrogen in metal hydride is a safe and durable alternative to current gas storage technology. We anticipate a lifespan of up to 30 years."

David Sauss, Head of the Steinbeis Innovation Center (SIZ) energyplus on the construction of the Hydrogen Terminal: "With this research project, we have the opportunity to create an energy center of the future and make the energy transition tangible. Additionally, we decarbonize a part of the research and create a nucleus for future projects and scientific work on hydrogen."

The research project "H₂-Terminal" at the Technical University of Braunschweig Research Airport is funded by the Federal Ministry of Education and Research (BMBF) with a total funding volume of over 20 million euros. It is a collaboration between the Steinbeis Innovation Center energyplus (siz energyplus) and the Technical University of Braunschweig.

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About GKN Hydrogen

GKN Hydrogen pioneers secure, emission-free storage of green hydrogen, assisting users and organizations worldwide in achieving their environmental goals and carbon neutrality today and in the years to come. The company develops and markets systems, plants, and solutions for the utilization of green electrical energy and hydrogen. These systems generate green hydrogen from renewable energy sources and store it compactly and without loss in metal hydride over extended periods. Depending on demand, green hydrogen can be used directly or converted back into electricity and heat. GKN Hydrogen is a part of Dowlais, an engineering group specializing in the automotive sector.

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About the Research Project of SIZ energyplus and Technical University of Braunschweig

<https://magazin.tu-braunschweig.de/pi-post/spatenstich-zum-neubau-des-hydrogen-terminals-am-braunschweiger-forschungsflughafen/>

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