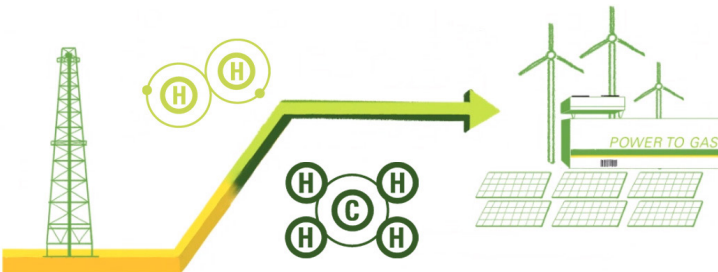


Research and development

The DBI Group - a competent partner for applied research on safe and environmentally friendly energy supply with the energy carriers natural gas, underground, large-volume storage of renewable energy using Power-to-Gas and hydrogen UGS.

- Feasibility studies on reservoirs and -fluids, storage and overburden rocks for natural gas, H₂ and CO₂ underground gas storage
- Laboratory investigations and model adaptations for multiphase flow gas/water/oil, CO₂/water and for gas mixing (H₂/natural gas, L-gas/H-gas)
- Development of thermo- and fluid dynamic models for underground storage of special gases such as H₂ & CO₂
- Material designs for special well completions (H₂, CO₂)
- Technology development and optimization for low-permeability reservoir rocks
- Reduction of risks in frac/crack generation
- Impacts of associated gas components on underground and surface installations



Contact

DBI^{GUT}

DBI Gas- und Umwelttechnik GmbH

Department Gas Production and Gas Storage
Karl-Heine-Str. 109/111
D-04229 Leipzig / Germany



Dipl.-Chem. Udo Lubenau

Manager of
Gas Production and Gas Storage

Karl-Heine-Straße 109/111
D-04229 Leipzig / Germany

Phone: (+49) 341 2457-160
Fax: (+49) 341 2457-136
udo.lubenau@dbi-gruppe.de

© DBI Gruppe 2024, Adobe Stock - ASDf



www.dbi-gruppe.de

www.dbi-gruppe.de/gasspeicherung

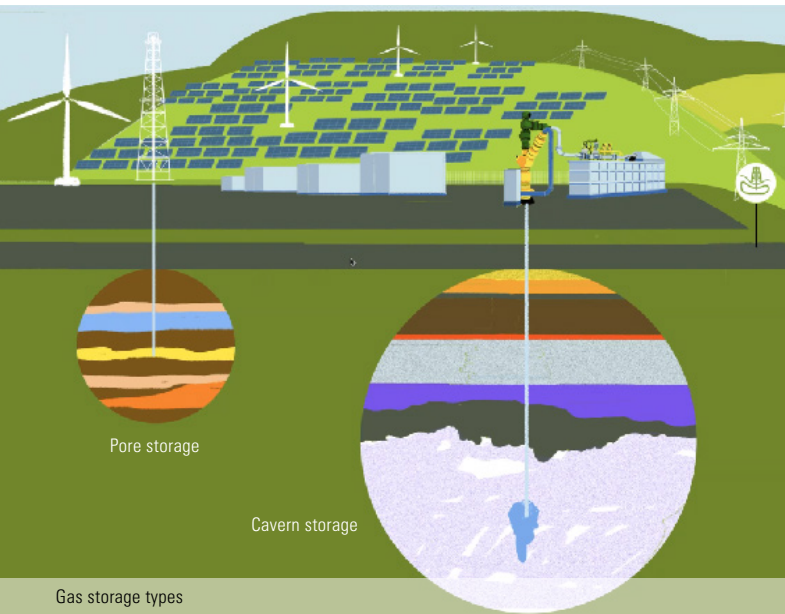


Hydrogen - Underground storage Research and development



Services for conversion of natural gas UGS to hydrogen

The increasing integration of renewable energies into the energy supply makes the storage of volatile wind and solar energy an essential system task. Underground gas storage facilities will be the vital backbone. We support you in the **conversion of your underground gas storage facility to hydrogen storage** and develop a future-oriented strategy.



- Evaluation of H₂ storage capacities for pore and cavern UGS
- Evaluation of the actual condition and H₂ tolerances of the UGS, above and below ground
- Material evaluations and analysis of the change of process parameters
- Conversion concept: measures, time and cost plan
- Economics evaluation

Trainings

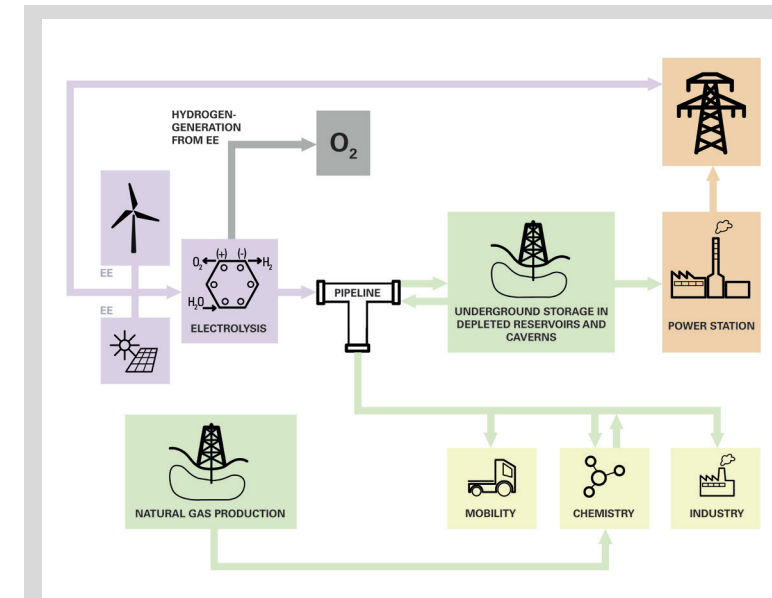
We offer training courses for underground hydrogen storage on various aspects for different target groups like Management, engineers, technicians and newcomers to the subject. Training programmes and materials can be adapted to your individual needs and questions.

- The role of hydrogen in the future energy system: potentials and possibilities
- Properties and special features of hydrogen
- UGS infrastructure and its role in a hydrogen system
- Storage capacities: Changes in volumes and energy capacity
- Storage operation
- Effects of hydrogen (-blends) on underground and above-ground installations
- Measures to increase the H₂ tolerance of UGS, material suitability
- Health Safety Environment and Ex-Zones



System integration

With our solutions, we pursue an integrative approach that takes into account not only the UGS themselves but also their integration into the entire energy infrastructure, considering questions along the entire value chain of energy supply.



Integrative approach: Consideration of the entire value chain - the gaseous energy supply

Projects we are proud of:

- H₂-UGS: Basic research on H₂ underground storage
- Construction of an H₂ cavern storage facility: Reallabor Energiepark Bad Lauchstädt
- LAU-HY: Transformation of a region towards the supply with hydrogen
- Bio-UGS and UMAS: Investigating the feasibility of subsurface bio-methanation in UGS and aquifers