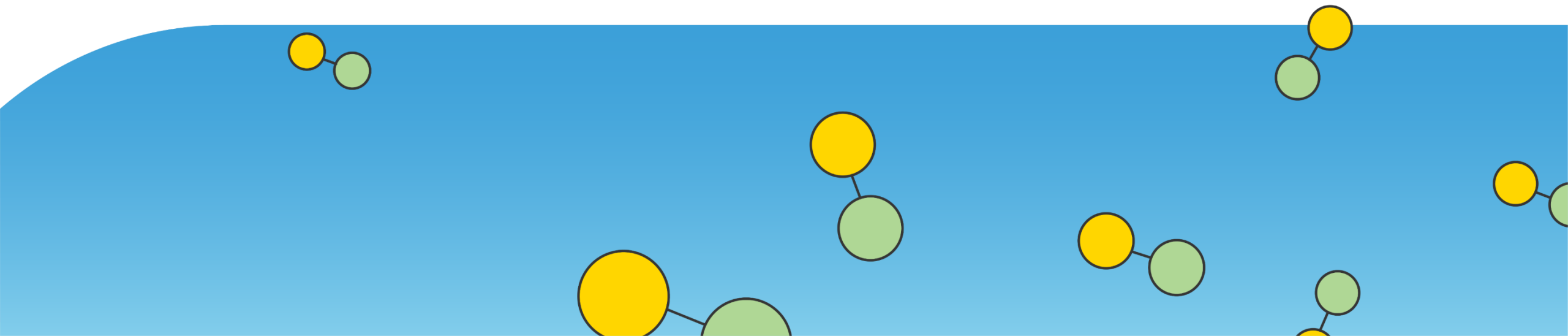
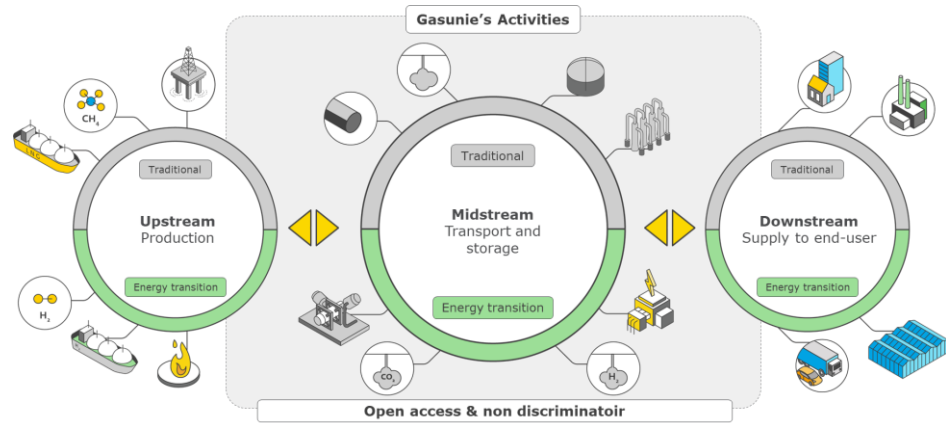


Gasunie: Crossing borders in energy

HyStock: large scale underground hydrogen storage in salt caverns



Gasunie: a European energy infrastructure company



We are a connecting factor in the energy value chain

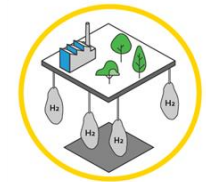
Hydrogen is an essential component to achieve a CO₂-neutral energy supply

- Gasunie ambition is to be driver of the hydrogen market in The Netherlands and Germany.
- Our system is based on principles of open access and non-discriminatoire
- Our role is to develop and to manage the required hydrogen infrastructure fully owned or in partnerships.
- Four focus themes onshore and offshore pipeline transport, underground storage and import terminals.

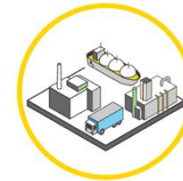
4 Themes



Transport



Storage



Import



Offshore

Underground Hydrogen Storage

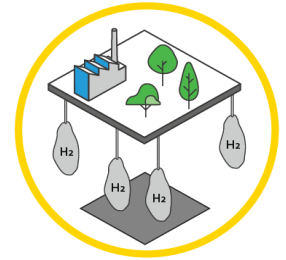
Ambition

Develop and manage large-scale modular Underground Hydrogen Storage facilities in The Netherlands and Germany that are connected to the hydrogen networks.

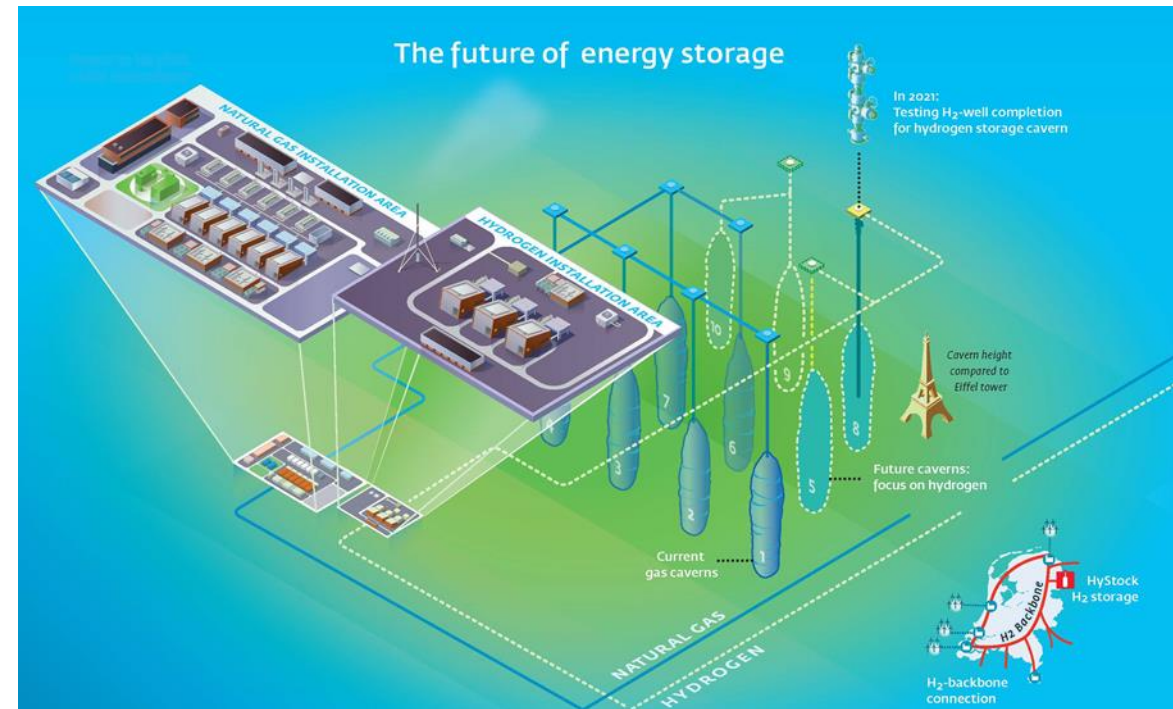
- **HyStock project (The Netherlands)**

- First salt cavern storage facility (≈ 200 GWh) operational in 2028.
- Development of (at least) four salt caverns in Zuidwending (NL) for large-scale storage of hydrogen soon after 2030.

- **H2Cast pilot project (Germany)**



Storage



website www.hystock.nl

Hystock project – Demonstration project A8 (1/2)

Demonstration project A8

to demonstrate safety, integrity and operational procedures of hydrogen storage making use of an existing borehole.

Started in Q1 2021 and completed in Q4 2022.

Work package 1

- Development of a generic risk identification methodology for hydrogen storage in salt caverns
- Development of a generic workflow to quantify risks associated with hydrogen leakage from salt cavern storage well



Hystock project – Demonstration project A8 (2/2)

Work package 2

- Design and execute an integrity test to assess integrity of last cemented casing, casing shoe, wellhead and Xmas-tree.
- Verify suitability and technical tightness of the hydrogen storage system under operational hydrogen storage conditions, including:
 - Materials (steel, cement)
 - Components (casing, tubing, wellhead, SSSV)
 - Well intervention equipment (wireline, snubbing)
 - Operational procedures
- Collect samples to support further research and gain insights on the effect and impact of stored hydrogen, including:
 - Geochemical and bacterial
 - Impact on materials

