

RAG Austria AG

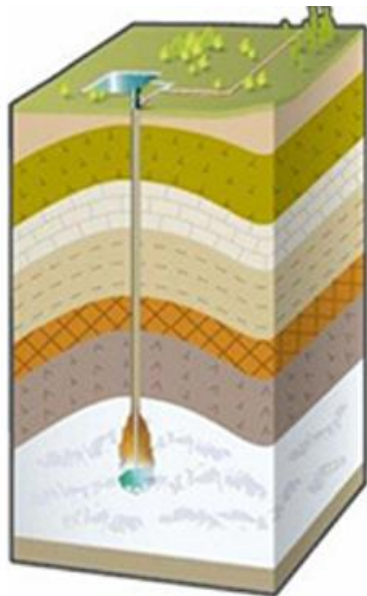
Company Profile and Vision

- Among leading technical Underground Gas Storage operators
- State of the art facilities
- Innovation in energy storage
- Storage volume 66 TWh (6 bcm)
- Unload capacity 30 GW

- Follow the vision to serve the renewables with our existing assets

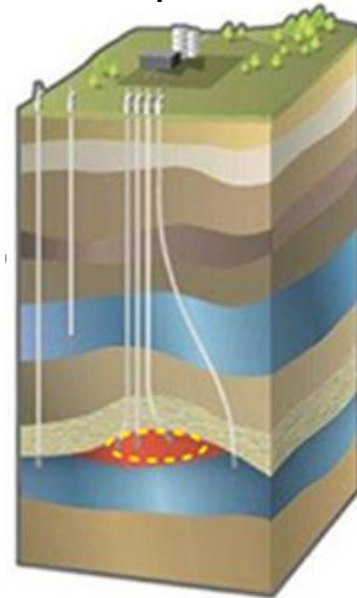
Storage options for Hydrogen

Salt caverns



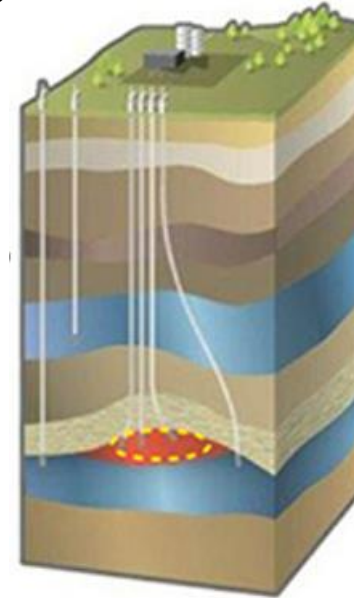
19%

Aquifers



6%

Hydrocarbon reservoirs

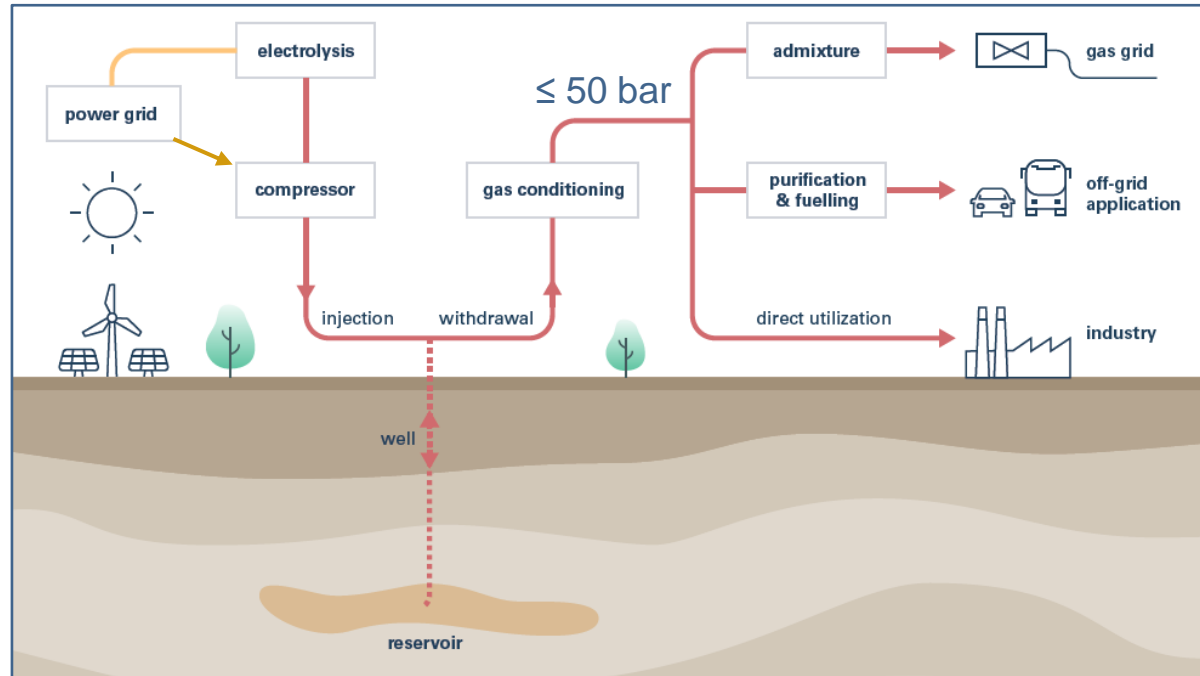


75%

Share at EU total volume of existing UGS

RAG – Hydrogen Storage Project overview

Abb.	Full titel	timeframe
USS	Underground Sun Storage	07/2013 – 06/2017
USS2030	Underground Sun Storage 2030	03/2021 – 02/2025
USC	Underground Sun Conversion	03/2017 – 02/2021
USC-FlexStore	Underground Sun Conversion – Flexible Storage	12/2020 – 05/2023
C-CED	Carbon – Cycle Economy Demonstration	07/2021 – 06/2025
HyStorIES	Hydrogen Storage in European Subsurface	01/2021 – 12/2022
HyUsPRE	Hydrogen Underground Storage in Porous Reservoirs	10/2021 – 01/2023
SERVARE	Seasonal storage in an optimal regulatory framework by assessing various opportunities	10/2022 – 09/2023



- Depleted natural gas reservoir
 - TOV: 1.2 Mio Nm³
 - ~1000 m depth, sandstone
 - 75 bar hydrogen pressure
- 2 MW water-electrolysis (PEM)
- Integration into RAG plants in 2023
 - newly built 8 km Hydrogen Pipeline (PN70 operating pressure ≤ 50 bar)
 - Hydrogen CHP
 - Green Heat & Power for RAG winter demand



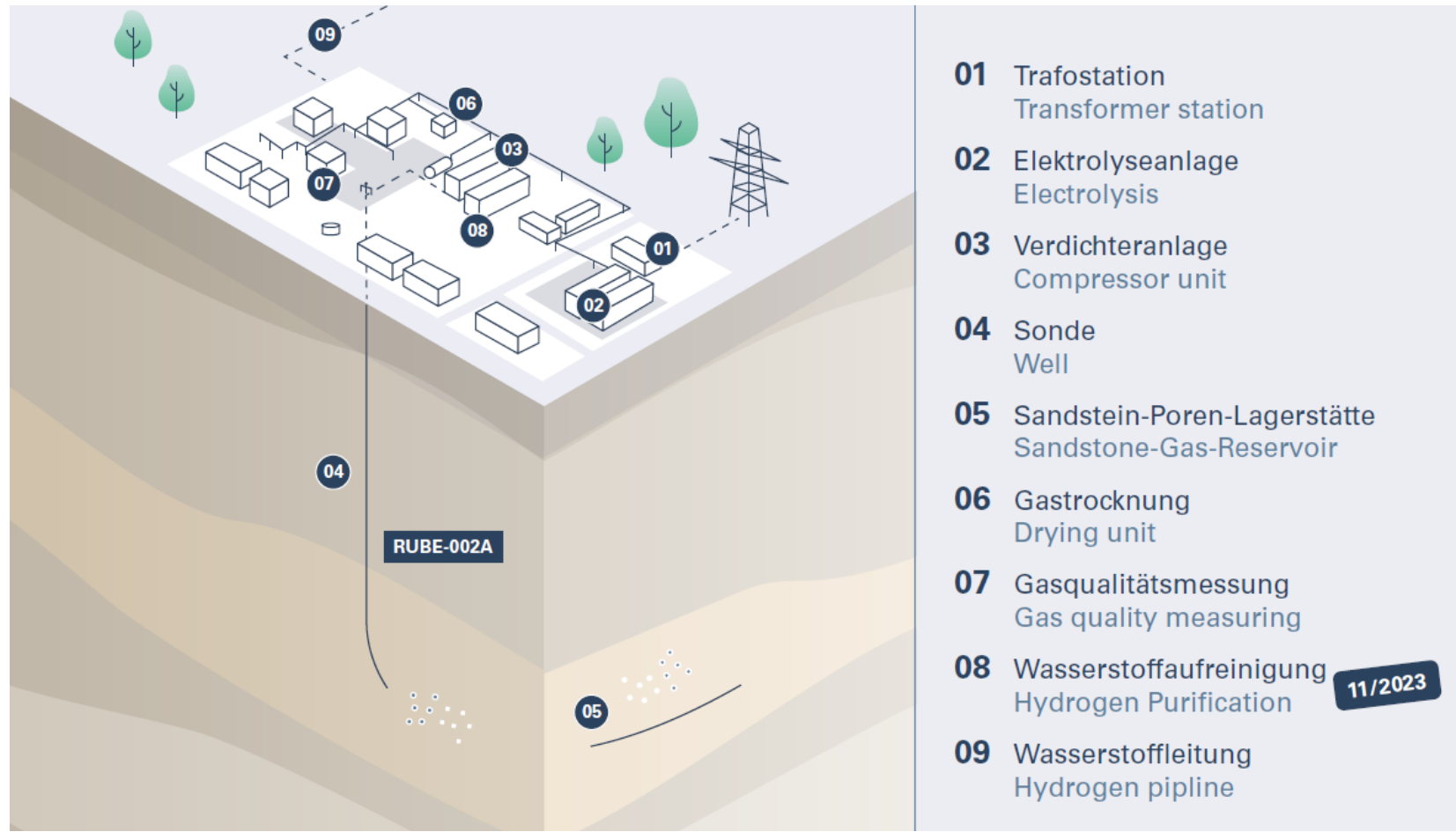
Underground Sun Storage - Impressions



**UNDERGROUND
SUN STORAGE**



Plant Overview



- 01** Trafostation
Transformer station
- 02** Elektrolyseanlage
Electrolysis
- 03** Verdichteranlage
Compressor unit
- 04** Sonde
Well
- 05** Sandstein-Poren-Lagerstätte
Sandstone-Gas-Reservoir
- 06** Gastrocknung
Drying unit
- 07** Gasqualitätsmessung
Gas quality measuring
- 08** Wasserstoffaufreinigung
Hydrogen Purification 11/2023
- 09** Wasserstoffleitung
Hydrogen pipeline

Objectives



- Interseasonal energy storage solution
- Proof of technical feasibility
- Alignment between results from lab experiments and field test
- Development and demonstration of hydrogen purification
- Modelling of the Austrian energy system – storage demand
- Use case consideration and development of associated services

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