

# UNDERGROUND SUN.STORAGE





# Underground Sun Storage

HIPS-NET Workshop – Project Update  
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## What is the research campaign about?

- Chemical storage of renewable energy in porous subsurface reservoirs with exemplary in-situ field experiment

## Goals of this research campaign

- Research on effects of hydrogen exposure to porous storage reservoirs
  - Develop market opportunities in a future energy system
  - In the medium term synthetic gases are likely to enter underground gas storage facilities
- Demonstration of capability to store renewable energy via synthetic gases
- Show sustainable ways to make use of given natural reservoirs

## Facts and Figures

- Flagship project of the Austrian „Klima und Energiefonds“
  - Duration: 3,5 years

- Consortium:



Verbund

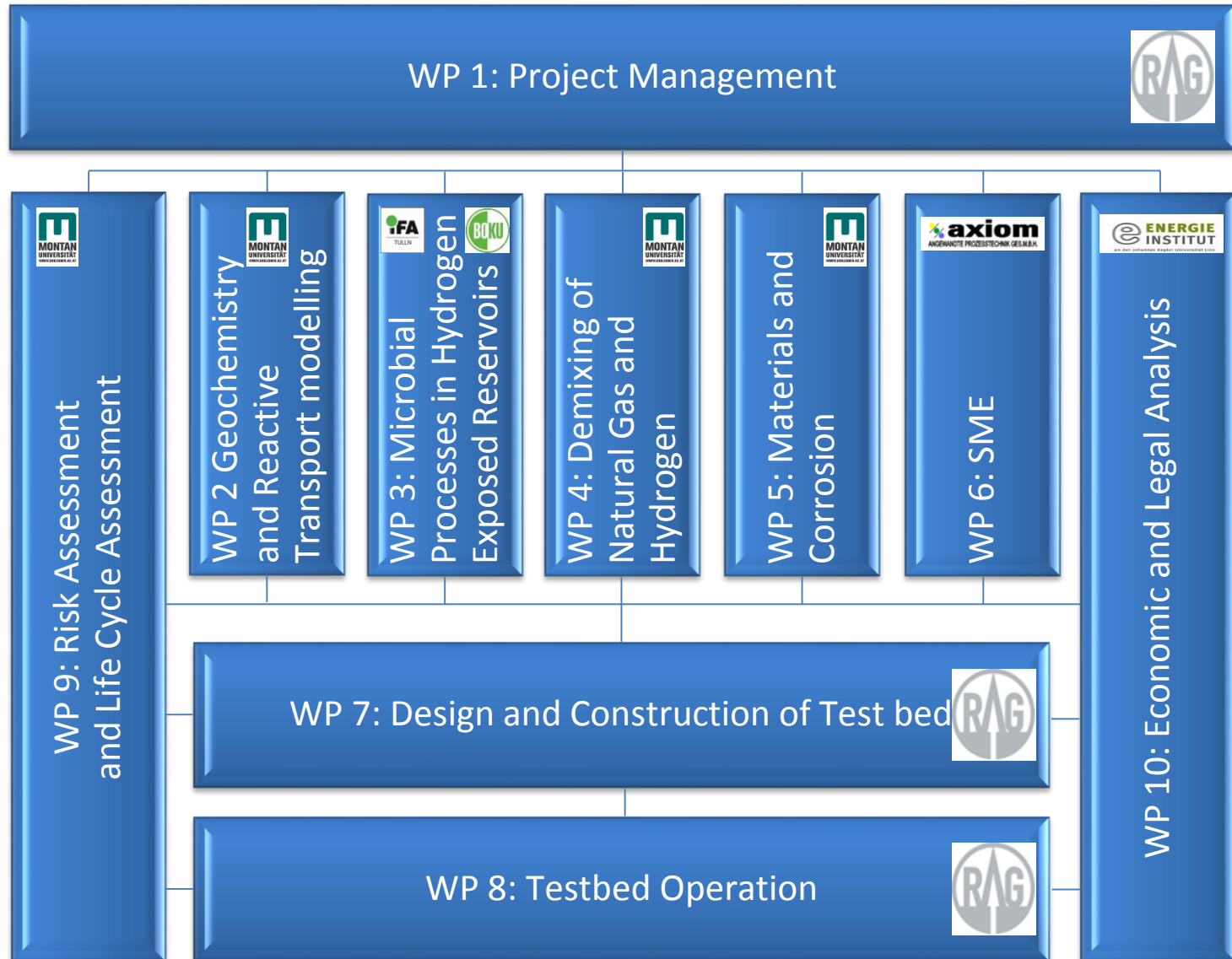
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ANGEWANDTE PROZESSTECHNIK GES.M.B.H.



- RAG is Consortium manager and leading investor
- Cooperation partners:



- Scientific focus on porous rock exposed to methane/hydrogen mixtures with a share of up to 10% hydrogen
- Phase I: **Fundamental research** at universities
- Phase II: construction and operation of an in-situ test bed facility



## Intermediate Results

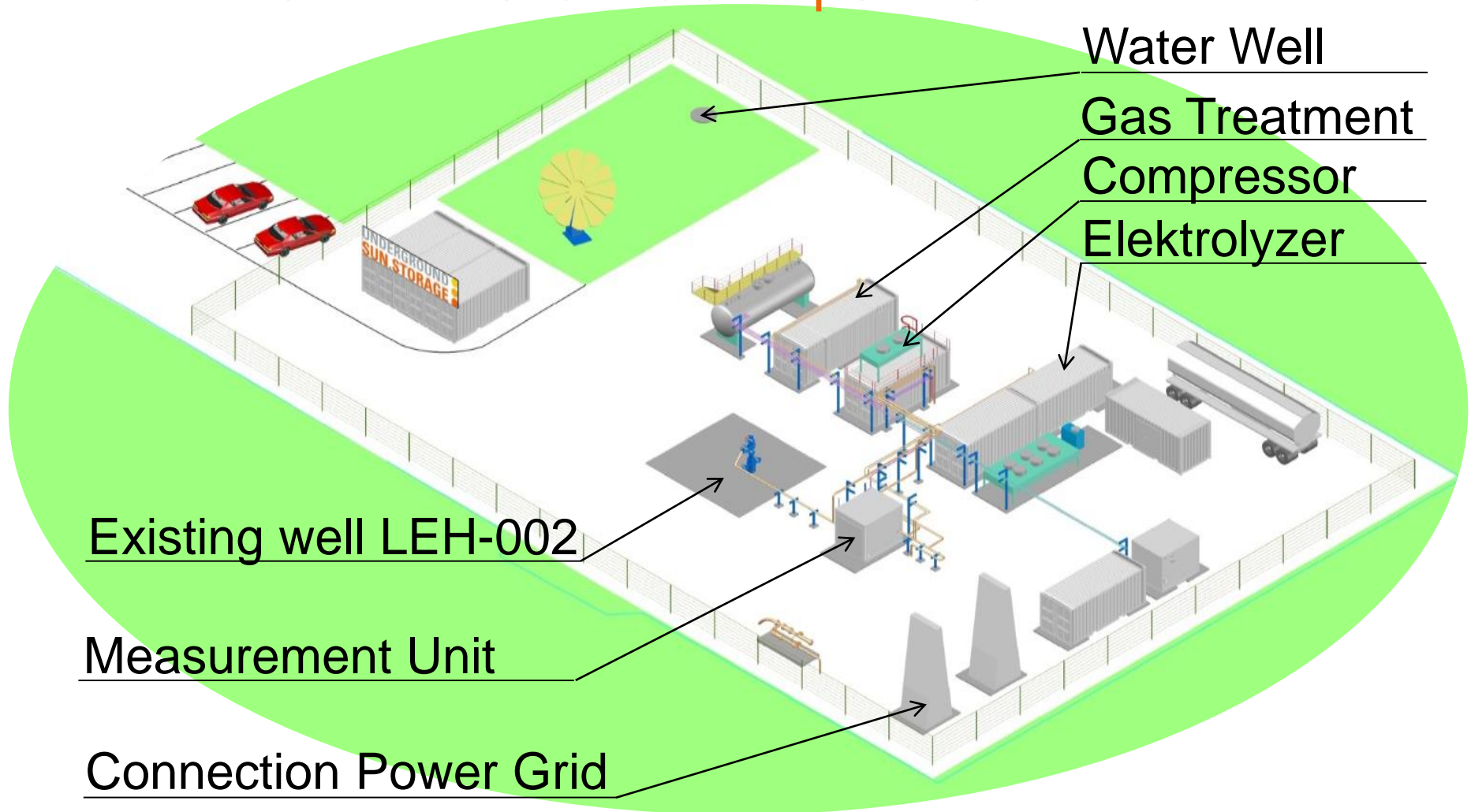
- Laboratory tests indicate no problems with storage integrity
  - H<sub>2</sub> Permeability in cap rock
  - H<sub>2</sub> Permeability in cementing
  - No formation of H<sub>2</sub>S
  - No influence of H<sub>2</sub> on well completion materials
- Microbial activity verified
  - Microbial consortia characterized
  - Environmental circumstances defined
- Due to this results intensive preparation of this worldwide unique field experiment started Q3/2014

} same range like natural gas





## Pilot Plant – In-situ Field Experiment



## Time Schedule

- All necessary permits by public authorities valid
- Site is under construction
- Commissioning 08/2015 – 09/2015
- Operation starting in 10/2015





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Thank you for your attention!