

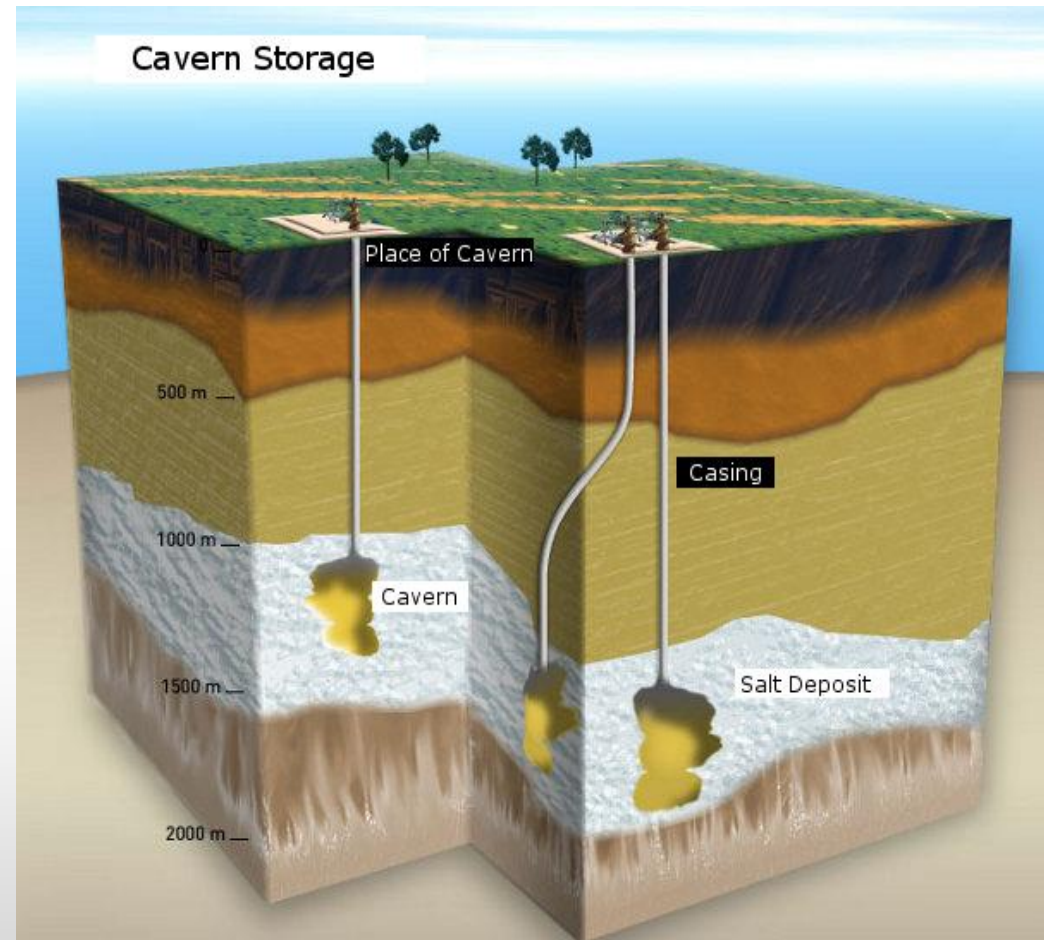


Gas an compressed air storage

Florian Samweber

Cavern Storage

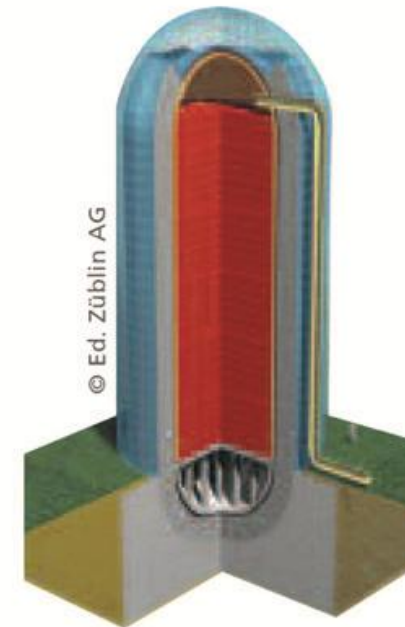
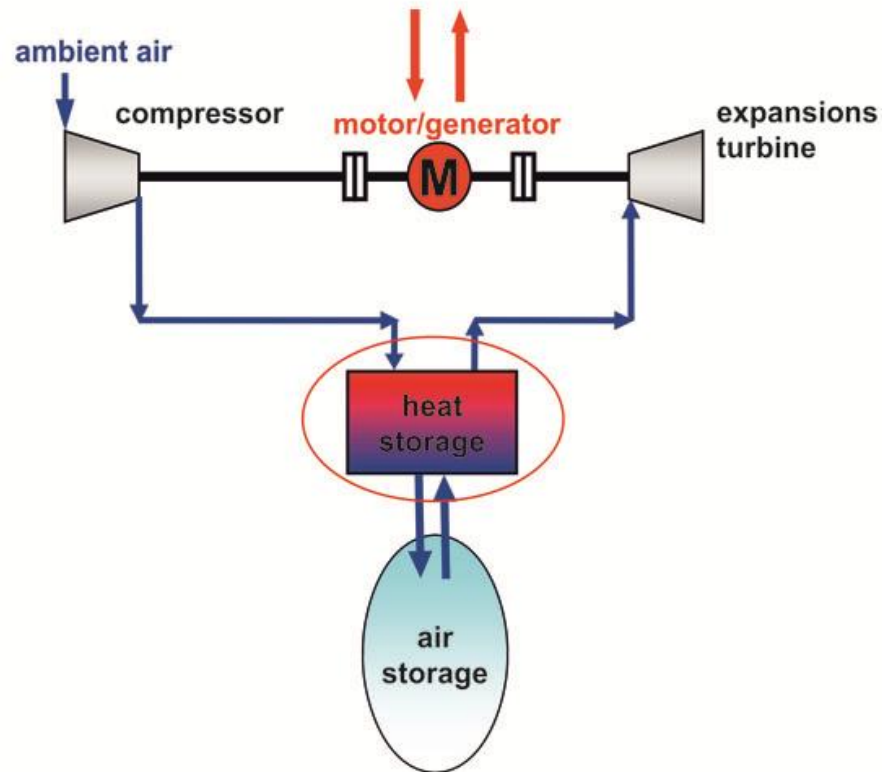
- Suitable soil structure
- Storages have to be leached
- Depth of 600 to 1800 m
- Cavern:
 - Maximum height of 500 m
 - Diameter ~100 m
- Distance between two caverns at least 300 m



[<http://www.kge-gasspeichergesellschaft.de/kavernenspeicher.html>]

Functioning of an adiabatic compressed-air energy storage (CAES)

Advanced Adiabatic CAES (EU-funded R&D project)



Source: Zunft, DLR

Energy Storage

- Stored Energy Density
 - Hydroelectric pumped-storage:
 - 0.7 kWh/m³ (300 m height, electrification efficiency 0.8)
 - Compressed air storage:
 - 2.7 kWh/m³ (20 bar, goal of electrification efficiency 0.7)
 - Hydrogen Storage:
 - 400 kWh/m³ (140 bar, electrification efficiency 0.3)
- Project ADELE-Staßfurt (RWE, GE, DLR,...)
 - Energy: 360 MWh
 - Power: 90 MW
 - Efficiency 0.7
 - Building starts 2015



Have a good day!