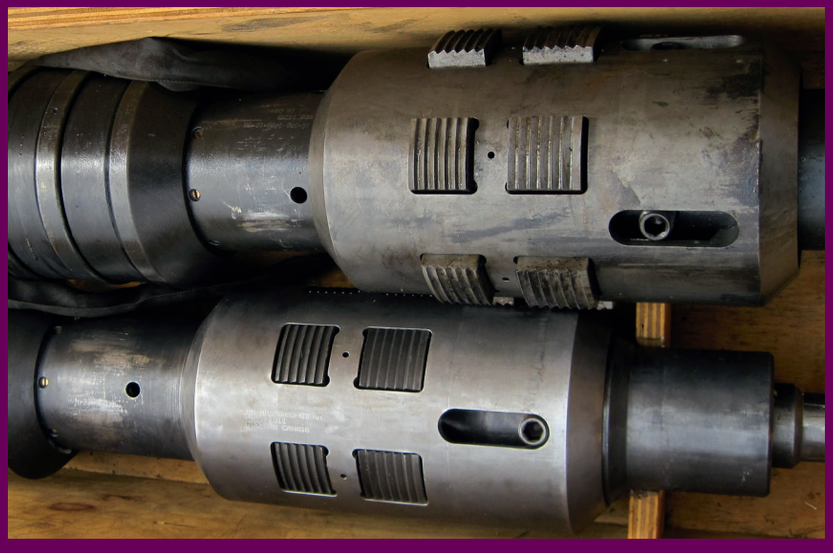
ESK

# Repair services for gas caverns
## Dry recompletion

Nowadays, the dry recompletion of gas cavern wells is a viable alternative to conventional wet recompletion processes.

Dry recompletion does not need time consuming flooding and gas refilling, and may therefore lead to substantial cost savings. What it does require, however, is a safe isolation of the pressurised gas filled cavern from the well to be repaired.

ESK can look back on a broad range of experience it gathered while performing the majority of recent dry recompletions where it was responsible for both the planning and a smooth implementation of the whole project.



Retrievable bridge plugs isolating the cavern from the wellbore

Part of
westenergie

In many industrialised countries, the storage of natural gas in underground salt caverns provides an important contribution to the security of supply.

In Germany alone, more than 250 gas caverns are currently in operation which represent a total working gas of 15 bcm (equivalent to approx. 16 % of the annual consumption). Meanwhile, a significant proportion of the existing caverns have been in operation for more than 25 years.

According to recent industry standards, a barrier system consisting of several barrier elements has to be defined for every well. Depending on their risk potential, barrier elements which do not sufficiently comply with defined performance standards must be replaced within a specified period.

Snubbing unit used for workover services

## At a glance

- There are standardised procedures based on a large number of realised projects
- The equipment and services required for common gas cavern well configurations are available in the market
- Substantial cost savings
- A consistent implementation of planning requirements ensures strict compliance with safety regulations
- No time and cost consuming flooding and gas refilling needed
- Interruptions of gas storage operations remain limited

In the past, the time consuming steps of flooding and gas refilling, which are required for conventional wet recompletions, resulted in long interruptions of gas storage operations. Furthermore, at storage sites without a working brine and water infrastructure, the necessary fresh water supply and brine disposal is often difficult, if not impossible, to realise.

In recent times, the dry recompletion of gas cavern wells has been preferred more and more over conventional wet recompletion processes. This repair concept was chosen for some 30 gas cavern wells in Germany over the last few years. ESK has made a substantial contribution to this progress, e.g. by designing detailed work programmes in compliance with strict safety requirements. In addition, ESK has contributed to the development of new tools which are essential for a safe and successful completion of the repair measures.

Find out more: **www.westenergie.de/en/esk/engineering-underground-storage-facilities**