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**Technical Conference Paper**

# Natural Gas Storage in Salt Caverns - Present Status, Developments and Future Trends in Europe

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# 1 Abstract

The increasing depletion of natural gas fields in central Europe and the accompanying need to transported gas over extremely long distances, as well as the liberalisation of the gas trading business, is currently feeding the market for additional gas storages – mostly in salt caverns.

This paper looks first at the status quo: the geographic spread of the stock of gas cavern storages in Europe, the current technical standards and the geological requirements for the installation of additional storages. This will be followed by a discussion of the latest trends and developments, and the associated geotechnical and technological challenges.

Unlike in the past when cavern storages were primarily constructed in thick, homogeneous salt deposits at favourable depths between around 900 -1 700 m, the European expansion in demand for storage capacities means that less favourable salt deposits also have to be utilised. This primarily involves thinner and inhomogeneous salt sequences at depths which are either very shallow or very deep.

New challenges also result from the increasing demand for merchant storages, which are characterised by frequent turnover and high deliverability. The associated modus operandi of such caverns increases the mechanical and thermal stress on the host salt rock. This has demanded the development of advanced dimensioning concepts.