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Management Concepts to Optimize Utilization and Commercialization of Gas Storages

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Abstract

Nowadays, storage system operators face major challenges on a daily basis. On the one hand they seek for complete commercialization of the available working gas volume. On the other hand they need to comply with operational restrictions and to provide evidence for a non-discriminatory third party access.

Furthermore, injection and withdrawal rates are generally not constant over the whole working gas volume but depend on several operational factors. Storage users are rather looking for most flexible storage products to implement them beneficially into their trading instruments.

The application of appropriate software programs, which can help to control an optimized utilization of individual storage facilities, may contribute to improve the marketability of the available storage portfolio.

Basically, such systems are divided into those dealing with contractual issues and those taking operational constraints into consideration.

The paper presents a description of the basic software architecture of technical storage management systems. Individual system components are introduced and differences in their application for different storage types will be identified.

Realistic storage scenarios will be discussed in the light of storage utilization planning as well as of energy/cost efficient storage operations. Possible optimization approaches will be demonstrated.

Key words: Gas Storage Operations, Storage Management Systems, Thermodynamic Modelling, Modelling of Aboveground Installations, Commercialization of Gas Storages