Societal and Business value of Underground Hydrogen Storage

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Overview

In my presentation I will discuss how Underground Hydrogen Storage can create societal value by providing energy services that lower energy system costs, and increase Security of Supply. In addition, I will discuss to what extent the market will provide these services, and which gap might be left that requires government support to fill.

This presentation is intended to be part of the session on “Economic Analysis of Hydrogen Energy Systems in the America and Europe” in the *Government and policy track*, as discussed with Ms. Shruti Khadha Mishra.

Methods

The presentation will be based on macro-(environmental) economic theory, energy modelling studies, techno-economic analysis of Undergrond Hydrogen Storages (among others the work of IEA-TCP Task 42), innovation theory and energy market data.

Results

The results are an analysis of future system value of storage, and the types of storages that will be able to provide these. It also gives the type of market failure that impedes the necessary investments, and what instruments might be able to overcome these.

Conclusions

Storage needs support during the innovation phase, particularly because of the transition failure that affects the hydrogen markets. Once the hydrogen market is mature, storage should not require subsidies. An exception is if governments have a higher demand for Security of Supply than is optimal for market players.

References