CO_2MultiStore Joint Industry Project

Development of Multi-user Regional CO_2 Storage Assets

The objectives of the CO_2MultiStore project are to reduce the risks to the economic and business case and inform the regulatory framework for the development of two or more storage sites in multi-user regional CO_2 storage assets.

These objectives are being met by:

- Carrying out risk analysis of containment of CO_2 for two or more sites in a multi-user regional store
- Identifying, implementing and testing risk reduction measures for subsurface containment of CO_2
- Assessing the benefit of risk mitigation to development of a regional storage asset
- Informing the licensing, leasing and monitoring of storage sites within a multiple-user store
- Capturing knowledge learned during the project that is transferable to other regional storage sites

The first demonstrator Carbon Capture and Storage (CCS) projects are expected to use depleted hydrocarbon fields as geological stores for CO_2 injection, whereas regional sandstones have the potential storage capacity for subsequent development of much larger commercial-scale CCS projects. Multiple store sites within hydrocarbon fields and large sandstones present challenges and implications for licensing, operation and integrity of the storage asset.

The project research examines an exemplar northern North Sea sandstone, the Captain Sandstone, as a potential regional storage asset for CO_2 captured from a “cluster” of Scottish sources and applies the discussion and decision-making to other offshore UK storage scenarios.

Facilitated study workshops and targeted dialogue are deriving and capturing generic learning and knowledge about key questions transferable to other locations and other regional storage assets. Consideration of many elements common to storage sites and regional storage scenarios are being elicited and captured e.g. legal implications, key questioning and multi-user interface. Identification of the key questions to be asked and addressed for all storage sites is important because CCS legislation requires CO_2 storage assets to be more actively managed than for the hydrocarbon industry. The decision-making of scenario selection, uncertainties identification, corrective measures application and consequences to the storage sites and asset are also being recorded.

The expert input from participants is a key contribution, and their differing fields of expertise and wider perspectives has influenced what is undertaken. Study members and experts with technical CCS expertise informed the assessment of risks relating to the development of a multi-user store. Members also defined scenarios to be modelled and reassessed risks using results from modelling, from which to generate transferable knowledge and guidance relevant to other storage sites for future CCS projects.

Current partners:
Shell, The Crown Estate, Scottish Government, Scottish Enterprise and Vattenfall

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