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**Programme Area:** Carbon Capture and Storage

**Project:** MMV FRP

**Title:** One Page Summary

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**Abstract:**

Effective, but practical and economic, monitoring of CO<sub>2</sub> storage sites is a critical part of ensuring that CO<sub>2</sub> is safely stored, legislative requirements are met and public confidence in CCS is gained and maintained. A large amount of work is going on in the area worldwide, with experience being gained through a series of CO<sub>2</sub> injection projects both onshore and offshore. The ETI identified development of Measurement, Monitoring and Verification (MMV) tools to meet UK requirements as a key focus area for its CCS Programme, and undertook this Flexible Research Programme (FRP) Project to identify UK needs and priorities for technology development

**Context:**

This desk-based survey of UK requirements for Measurement, Monitoring and Verification (MMV) of offshore CO<sub>2</sub> storage sites was designed to provide a clear view of the developing legislation, state of the art of MMV technologies and field experience in UK offshore applications. The study reviewed UK legislative requirements, features of likely UK storage sites and potential MMV technologies. From this, MMV technology development requirements were identified to give an understanding of the main technology gaps and to establish where ETI resources should be focused to deliver future technology development. The Project provided valuable and focused information about the technology and developing regulatory environment and identified priorities for the development of MMV technologies to meet UK requirements.

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**ETI Programme:** Carbon Capture and Storage  
**Project Name:** MMV Tools – UK Requirements Study  
**Contractor/Consortium:** British Geological Survey

## Context

Effective, but practical and economic, monitoring of CO<sub>2</sub> storage sites is a critical part of ensuring that CO<sub>2</sub> is safely stored, legislative requirements are met and public confidence in CCS is gained and maintained. A large amount of work is going on in the area worldwide, with experience being gained through a series of CO<sub>2</sub> injection projects both onshore and offshore. The ETI identified development of Measurement, Monitoring and Verification (MMV) tools to meet UK requirements as a key focus area for its CCS Programme, and undertook this Flexible Research Programme (FRP) Project to identify UK needs and priorities for technology development.

## Project

The ETI sought two key outcomes from this FRP Project:

- To provide a clear view of priority MMV technologies and methodologies which the ETI should consider funding;
- To provide improved understanding of what a practical monitoring plan will comprise in 'typical' UK CO<sub>2</sub> storage projects.

The project was undertaken by British Geological Survey (BGS), supported by two subcontractors (TNO and Quintessa). The key deliverable of the project was a comprehensive report on MMV requirements, technologies and strategies, in two Volumes. Volume 1 comprises the main part of the report: Volume 2 provides an extended review of current MMV technologies and supporting appendices.

## Key Project Findings

The project provided a summary of the developing legislation in MMV. It considered MMV technologies in four broad areas: deep-focussed techniques (eg seismic) to monitor CO<sub>2</sub> plumes deep underground, shallow focussed techniques to measure leakage through the seabed, downhole techniques (ie putting instrumentation down wells) and ecosystem modelling (ie measuring effects on flora and fauna in the sea). The main initial opportunities for the ETI are considered to be in the downhole area, but further strategic analysis is being undertaken to define priorities.

## Further Information

Full information on the results of the project is available to ETI Members in the comprehensive confidential technical report.