



Newsletter

Project information

We are entering year four of the MOET project and continue to welcome new members to our stakeholder group. The MOET management team will meet in early April to review project progress and discuss future online engagement sessions. These are likely to be more focused on specific topics of interest including tailoring of future project outputs in response to your feedback. Please feel free to share any suggestions for future engagement sessions with [Hazel Napier](#).

Please also check out our growing body of resources on the project website at <https://www.projectmoet.org/>. We will add new resources as they become available and welcome any others you wish to share with us.

Work Package 1 update - Optimal use of subsurface geological resources for storage of hydrogen and CO₂

Area 1 Southern North Sea - Experimental work on the Bunter Sandstone, including measurement of permeability and geophysical property data before and after flow-through, is approaching completion. Sampling, testing and selection of Bunter Sandstone core plug pairs, vertical and horizontal, has been completed, and planning to conduct two tests to complete sandstone anisotropic analysis.

A paper on pressure communication within the Bunter Sandstone 'Structural controls on pressure communication across the Bunter Sandstone Formation, UK Southern North Sea', by Abel et al. has been accepted for publication in Geoenergy.

Seismic modelling of the Endurance structure indicates time-lapse shifts owing to geomechanical changes, associated with subsurface storage, are expected to be small and may be difficult to interpret when saturation and pressure changes are considered. Seismic modelling of hydrogen storage for the next quarter will assess the time-lapse seismic response from density and velocity logs.

Area 2 - Central North Sea, Outer Moray Firth - Interpretation of hydraulically connected, stacked Tertiary sandstones for porous rock storage, from seismic datasets and well data during first quarter of this calendar year was completed during March 2025. Interpretation of the top Balder Formation, top Ekofisk Formation, top Kimmeridge and the middle Miocene unconformity surfaces has established a framework to inform selection of areas for more detailed study of connectivity by MOET project research.

Area 3 - East Irish Sea - Presentation of a stratigraphic framework, with faulted offsets for the East Irish Sea MOET study area has been completed. Seismic data and well-ties were interpreted in the Morecambe area to generate a framework that will inform appraisal of porous rock and cavern storage in the East Irish Sea.

Work Package 2 update - Understanding the shallow subsurface, seeps and the marine environment

Staff at NOC are finalising their experimental work to understand the reaction products formed in sediments during hydrogen or carbon dioxide leakage from a reservoir. Sediment samples were reacted with three gases (hydrogen, carbon dioxide, or nitrogen) for three weeks with subsampling every two days. Different reactions occurred between the hydrogen and carbon dioxide scenarios, namely differences in pH, total alkalinity, and sulphate and metal concentrations, pointing to changes in the microbial community and chemical reactions with the underlying sediments.

Hydrogen release scenarios will be run over the next few months to start to assess monitoring needs.

Work Package 3 update - Societal consequences of the energy transition

PML and DEFRA (Dr Betheney Wills) have begun to collaborate on generalised impact assessments to evaluate the environmental and socio-economic effects of marine policies, offshore wind developments, CCS and hydrogen and ecosystem services.

PML social scientists have developed a robust measure of ocean connectedness, and are currently developing measures of cultural ecosystem services, to be implemented in the MOET public survey. This work will feed into the generalised impact assessment and allow us to understand more about use and perceptions of the marine environment and offshore technology.

Project management team

Jim White – Principal Investigator (BGS)

Maxine Akhurst – WP1 lead (BGS)

Jerry Blackford – WP2 lead and PML Principal Investigator (PML)

Elizabeth Gabe-Thomas – WP3 lead (PML)

Hazel Napier – WP4 lead (BGS)

Gaye Bayrakci – NOC Principal Investigator (NOC)