MANAGING THE OFFSHORE ENERGY TRANSITION

Newsletter

Future Meetings

The next Programme Advisory Group (PAG) meeting will be held on 5 June 2023. Topics for discussion will include the public perception work being planned, an update on data collection, a review of collective priorities and planning for a wider face to face stakeholder event.

We are planning to hold a face-to-face workshop with all our stakeholders in the Autumn 2023 – three possible dates are 31st October, 2nd November and 23rd November. Once a date is confirmed, we will send out invitations to all stakeholders. The event is likely to be located in London given good transport links from most parts of the UK.

Work Package 1 update - Optimal use of subsurface geological resources for storage of H_2 and CO_2

Mapping the top Bunter Sandstone, top and base Zechstein salt from seismic data is now completed for the southern North Sea area of interest. Grids of the surfaces, with absence zone along some regional faults, are available to the WP1 MOET research team. Work on the seismic velocity model, to convert surfaces to depth below sea level, is ongoing. The deformation histories and so velocity profiles differ for each of the sub-basins in which the Bunter Sandstone is distributed. A classification of the boundaries that define zones within the Bunter Sandstone has been prepared, applied, tested, and found to be robust.

Data from wells penetrating the salt are being used to evaluate the proportion of salt to non-salt intervals in the wells, as part of the H_2 theoretical salt cavern storage capacity assessment. Salt core has been identified for prep of microscope thin sections.

First experimental H_2 flow tests by NOC though Bunter Sandstone samples collected in the southern North Sea area of interest have been completed and property data collected. Samples of the Bunter sandstone have been collected for measurement of porosity and permeability prior to testing in the BGS microbial and geochemical laboratories, including for the planned Rough Field hydrogen storage site. Population of a database of wells, temperature, and salinity, to apply upper and lower limits for microbial activity as a screening tool, is in progress for southern North Sea fields.

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

Communication with WP3 in order to put together a useful dataset for use in their ecosystem services model while hydrodynamic ecosystem models are developed for each site as part of WP2. Minor updates are being made to the PLUME model for CO_2 and H_2; mostly increasing efficiency and bug fixes with interactions to an updated version of the hydrodynamic model (FVCOM). We have also been given computational time on ARCHER2 which should help with the speed of the simulations and allow high resolution for detailed simulations of the windfarms and gas releases.

Geological mapping (1:10k scale) of the seabed in the southern North Sea has commenced and well underway. This process uses Hi-Res multibeam data, previously published geological maps (1:250k scale), seabed sediment samples, engineering properties datasets and shallow subsurface information including geophysical (e.g. seismic) data and boreholes. The completed geological map of the seabed offshore of Yorkshire has been completed and released on the BGS website via the offshore geoindex (https://mapapps2.bgs.ac.uk/geoindex_offshore/home.html?_ga=2.239431043.1044557464.1684392005-496073957.1684392005). Other relevant offshore geological maps at 1:10k scale already exist for offshore Anglesey, Bristol Channel and for part of the Dorset coast.

Work Package 3 update - Societal consequences of the energy transition

We are currently working to define the geographical areas of the UK that we will target for our public survey. Discussions with WPs 1 and 2 have taken place to determine the offshore areas of interest, enabling us to identify adjacent postcodes. This work is essential to understand which communities will likely be most affected by modelled technologies for comparison. The survey aims to understand better the impact of marine cultural ecosystem services and perceptions of how low-carbon technologies may impact these services. Related to this, we are currently developing conceptual linkages between cultural ecosystem services and the psychological construct of ocean connectedness (a cognitive and emotional bond with marine & coastal environment), previously identified as an underexplored influence of offshore technology acceptance. In addition, we have presented an overview of the MOET work to DEFRA and representatives from the Marine Natural Capital Ecosystem Assessment team.