MANAGING THE OFFSHORE ENERGY TRANSITION

# Newsletter

## Meetings and engagement activities

In the May newsletter, I shared some information about two online discussion sessions we are planning in September and October 2024. These will focus on (i) issues of regulation and policy and (ii) technical aspects of offshore low carbon energy technologies. I noted that co-location* and co-existence** of these technologies have been common discussion themes which we hope to explore in more detail in both sessions. Dates reserved for these sessions are 17th September ,15th and 17th October for which invitations have been sent out. Each session will run for 1½ hours and planning is underway to ensure we get the most out of these sessions.

* Co-location - where two or more activities take place within the same geographical extent

** Co-existence - where two or more activities operate at the same time

Please don't hesitate to get in touch with Hazel Napier hjb@bgs.ac.uk if you have any questions or would like to share your thoughts on our planned approach to engagement.

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

A detailed programme of work in Area 1, southern North Sea, to investigate interactions between energy transition uses for the east coast industry cluster activities in the first half of the project is drawing to completion:

- Results from Bunter Sandstone five-month pore fluid flow-through experiments, by $H_2$ or $CO_2$-saturated brine show low reactivity, so any geochemical reaction changes are likely to be small. Hydromechanical experiments are being re-run to see if physical properties have changed due to the exposure. The impact on hydromechanical properties of sedimentological anisotropy is now being considered.
- Experimental methodology to evaluate microbial growth at 80°C for porous rock storage of hydrogen, for a period of six-months to commence August 2024, is being finalised. Preparation of the samples for rock characterisation by petrography and clay mineralogy is in progress.
- Mapping of formations for salt cavern capacity calculation is now completed and to be presented at Geological Society London 'Salt Tectonics for the energy transition', September 2024. Initial appraisal of Humber area hydrogen salt cavern storage capacity is now complete.
- A series of maps and cross sections correlating salt cycles across UK Southern North Sea basin from well logs are in preparation for presentation at the Geological Society London.
- A final draft paper on structural zone boundaries and hydraulically connected units of the Bunter Sandstone is in internal review.

A different approach in the second half of the project for each of Areas 2 and 3, will respond to industry questions and specific research needs. In Area 3 East Irish Sea salt cavern storage assessment is an initial priority and regional characterisation alongside commercial $CO_2$ storage sites. The main interest in Area 2, outer Moray Firth to Central Graben, are hydraulically connected stacked Tertiary sandstones for $H_2$ and $CO_2$ geological storage.

## Work Package 3 update - Societal consequences of the energy transition

Discussions held with Dr Christine Boomsma, psychologist at the National Institute for Public Health and the Environment in the Netherlands (RIVM) regarding work on public mental models of hydrogen storage and transport and the potential for international collaboration. Despite the general feeling within the research community that the public are completely ignorant to hydrogen storage, focus groups conducted at RIVM's successfully elicited public mental models of hydrogen from production to end use by providing an example of the dairy industry production chain.

## 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)
Angus Best – NOC Principal Investigator (NOC)