

## Storage Research Group Parallel Session

The Storage Parallel Session of the September 2013 UKCCSRC Biannual Meeting heard presentations from Rosemary Whitbread (HSL) and Dennis Gammer (ETI) on how their organisations are involved in CCS, future research needs for storage and how they might work with UKCCSRC in the future to progress UK CO<sub>2</sub> storage. Storage Research Group Leader, Prof. Stuart Haszeldine then gave an overview presentation on a few test injection sites and asked questions to focus thinking to develop a UK injection project. The group had a discussion on future UKCCSRC efforts to identify possible injection locations and opportunities.

Rosemary Whitbread, HSL

HSE is one of the few organisations that is involved across the entire CCS supply chain. While there has been a significant amount of dialog between HSE and the CCS transportation sector, there has been less interaction on the topic of injection. This is due to a lack of active CO<sub>2</sub> injection in the UK, but as plans progress, there is a good working relationship between HSE and CCS sectors and both HSE and HSL will be able to engage on injection sites, once more concrete discussions for a site are initiated. HSE will have a roll for in the licencing of injection sites, and early dialog with HSE and sites before formal applications are submitted is recommended so that both parties can work towards a successful plan for the final licence. HSE/HSL have in the past worked with academia to fund PhDs, and there may be scope and budget in the future to fund students in the future.

Dennis Gammer, ETI

ETI consider CCS to be one of the biggest and most financially important UK energy technologies to achieve our national low carbon aims. This is evident by the £50-60M per year budget. Several recent CCS projects were highlighted, including: PSE's CCS Whole System Modelling Tool-kit, Senergy's UK Storage Appraisal Atlas and ETI's £2M contribution to the National Grid drilling project. In terms of future CCS work that might be explored, ETI gave some examples of priority research areas, with one area being further work to understand depleted gas stores and how these could be used to store CO<sub>2</sub>.

## Towards a UK CO<sub>2</sub> Storage Test Site

After Prof. Haszeldine gave an overview of other test sites for CO<sub>2</sub> storage the group discussed how, where, and what a UK test site might look like. Some thoughts on the form of the site were that it could be used to test controlled experiments in addition to testing borehole design, CO<sub>2</sub> injection rates and geochemical reactions. It might be beneficial to have a site that had flexibility to undertake both small and larger-scale injection.

Locations offshore would certainly be preferable and representative of actual long-term UK storage, but the cost of drilling and maintaining an offshore pilot facility may prove too large to overcome. If onshore injection sites are looked at, locations with support from local communities would be vital. Also proximity to CO<sub>2</sub> sources is another significant factor when looking at a test site location, and

perhaps should be a starting point when looking for sites. Sites with representative geology to offshore stores, either depleted oil and gas fields or saline formations, should be identified as that is an important consideration for location. The 2008 Energy Act needs to be reviewed to see if it allows onshore injection at a test-scale, or if a special dispensation needs to be obtained.

While there are test sites in other countries which UK researchers can potentially buy into, it was felt that this isn't always possible, and a UK CO<sub>2</sub> injection site is quite crucial for proving credibility to regulators and the public for future larger injection sites. A UK site will also build national capacity in the field, as the various carbon capture pilot rigs have done for capture engineers in the UK.

A scoping study to look at some of these options in more detail was suggested, and one which the UKCCSRC has funds to pursue. It was felt that a group of interested individuals should be formed to draft needed objectives for a UK test site, and then a scoping study can look at where these objectives might be achieved.