CNS: Delivering CCS with value ADD

When it comes to making CCS a reality in the UK, Scotland has an unmoveable and unique advantage. Nowhere else in the UK is as close to the geologically near-perfect, and technically diverse, sub-surface CO₂ storage sites of the Central North Sea.

Deep beneath the waters of the Moray Firth, the Captain Sandstone alone has already been shown to have enough capacity to safely store the next fifty years of emissions from UK fossil fuelled power plant. Nearby, another ten reservoirs can easily hold one hundred year’s worth of Europe’s CO₂ emissions.

Scotland is the natural home for this vital new industry for other reasons too. Much of the infrastructure needed to develop this low carbon opportunity is already in place thanks to the legacy of the North Sea oil and gas industry. As that sector begins to scale back production, the pipelines and reservoirs can be converted to good use once again.

With the commercial viability of CCS more critical than ever, re-using already paid-for assets makes sound economic as well as environmental sense. This combination of well researched and understood geological storage sites and existing transportation infrastructure puts the CNS region well ahead of the global pack when it comes to developing this essential new technology and provides the UK with a unique and affordable opportunity to commercialise CCS.

Central North Sea: A unique opportunity

- Half of Europe’s offshore storage capacity in one place
- Over 5,000 km existing offshore pipelines
- Most detailed appraisal of any UK offshore storage sites
- Depleted gas fields suitable for early storage development
- Easily reached from the UK’s most viable CCS onshore clusters
- Diverse range of accessible storage sites
- Viable shipping infrastructure identified for CO₂ importation
AFFORDABLE
The ready-made transportation infrastructure will give major emitters, from way beyond Scotland, affordable access to the huge storage resource. Capturing the greenhouse gas from multiple sources then consolidating it in one regional network of diverse shared storage sites within the CNS will dramatically reduce costs.

Developing the CNS will also help to safeguard the thousands of high-skill jobs and associated economic benefits of the North Sea oil and gas industry, retaining the talent and know-how of the men and women who work in this sector, in the UK.

And it’s not just in Scotland where the benefits will be felt. Throughout the UK there are companies, which can fulfil every aspect of the CCS supply chain. A new industry based around a CNS CO₂ storage network will support growth nationwide.

DELIVERABLE
Institutional support for the development of the Central North Sea is renowned and respected the world over. There’s a genuine ‘can do’ culture already evident at local, regional and national level. Organisations such as Scottish Government, Department for Energy and Climate Change, Scottish Environmental Protection Agency, Health and Safety Executive and The Crown Estate, have already demonstrated a joined-up approach to supporting, accelerating, and consenting the activities needed to take CO₂ from source to store.

These organisations have developed an unmatched body of knowledge. By leading one of the world’s most detailed FEED studies for commercial CCS, with the ScottishPower Consortium at Longannet Power Station, a reliable dataset of information has been established. These working practices provide practical assurance which continues to attract CCS project developers to the region.

Collaboration doesn’t stop there. Government, industry and academia are on board too – funding research and development projects at every point along the CCS chain. They have already delivered ground-breaking work on regulation, capture, transportation, storage and cost-reduction.

And nowhere else in the world will you find so many developers with the commitment, expertise and financial strength to capitalise on that knowledge and make full-scale CCS a commercial reality.

DIVERSE
In the longer term; the CNS Storage Network offers even greater economic benefits. The scalability, connectivity and diversity of storage opportunities mean that businesses of all sizes can participate in the process at different stages along the chain. With the region’s geology comes a naturally diverse opportunity, this will give multiple operators a range of storage options for many years to come.

With easy access to the depleting oil and gas fields off Scotland’s East coast the CO₂ could be put to good use before it’s stored. The use of CO₂ for Enhanced Oil Recovery is a well-established means of increasing production and ultimately recoverable hydrocarbon reserves. This will ensure not just greater energy security, but also improve and extend tax revenues.

“The UK has done enough CCS analysis, now is the time to move forwards; commercialising this new industry to protect and create new employment. The CNS provides the most abundant, diverse and well-characterised storage around the UK, enabling multiple developers to participate, within one centralised offer. The CNS is accessible now and secures our low-carbon, high-value future.”

Professor Stuart Haszeldine OBE