

---

## CCS Hub Study for Scotland and the Central North Sea

June 2014

Many analysts have agreed that carbon capture and storage is essential if we are to meet the challenge of climate change at least cost, in Scotland and worldwide.

Element Energy Ltd, working with partners SCCS, AMEC, and Dundas Consultants, recently completed a comprehensive analysis into the development of CCS in the UK on behalf of Scottish Enterprise.

The report examines a wide range of scenarios for how CCS might develop and uses these to develop blueprints and detailed business plans for how to deliver CCS at least cost, least risk, and with maximum flexibility.

The report details how the combination of Carbon Capture and Storage with Enhanced Oil Recovery in the Central North Sea provides an excellent platform to achieve multiple benefits:

- Support the decarbonisation of the economy in Scotland, the UK and North West Europe, with potential for storing up to 1,700 million tonnes of UK and European CO<sub>2</sub> over the period to 2050, helping us to meet the challenge of climate change.
- This can be accompanied by the economic production of up to 1.4 billion additional barrels of oil in the North Sea, extending the life of the oil industry in the UK, Norway and Denmark, and bringing in £10 bn in discounted revenue, and associated benefits in balance of trade, jobs, and energy security.
- Boost the economy – the potential gross value added to the Scottish economy from supporting infrastructure alone would be up to ca. £7 billion over the period to 2050.
- Reduce the costs of storage directly, leave a legacy infrastructure that could support decades of CCS activity, and generate tax revenues that could offset the costs of direct and indirect subsidies for CCS.
- Create cumulatively 44,000 person-years of employment in Scotland in the period to 2050.

**The study has illustrated that all the components are either in place, or can be readily developed, for Scotland to become a CCS hub, supporting UK and European CCS deployment.**

The CNS has by far the UK's largest variety of stakeholder interests, legacy facilities (pipelines, platforms and wells), potential physical and commercial / regulatory configurations for CCS development. This leads to a wealth of opportunity for established North Sea operators as well as new entrants. That demands leadership and flexibility, which Scotland is ready and willing to deliver.

The report provides a series of recommendations for Scotland if it wishes to be a European leader in CCS. Efforts to champion CCS projects, and develop infrastructure for EOR, power and industry in the UK and Europe should be stepped up immediately and continue during the 2010s on the following themes:

- Support for early CCS demonstration in Scotland
  - Maximising the UK and European market for CCS in the 2010s and 2020s
  - Supporting infrastructure that targets the CNS
-

- 
- Improving CCS readiness and optimising infrastructure
  - Improving the commercial attractiveness of CO<sub>2</sub> transport, storage and EOR

**For feedback on the report, or if you have questions on any aspects of carbon capture and storage or CO<sub>2</sub>-enhanced oil recovery, please email [Harsh.Pershad@element-energy.co.uk](mailto:Harsh.Pershad@element-energy.co.uk) or call 01223 852 496.**

Element Energy Ltd. is an independent impartial consultancy focussed on low carbon energy technologies.

For information about Element Energy please see [www.element-energy.co.uk](http://www.element-energy.co.uk)

For information on SCCS, please see [www.sccs.org.uk](http://www.sccs.org.uk)

For information on Dundas Consultants, please see [www.dundasconsultants.com](http://www.dundasconsultants.com)

For information on AMEC please see [www.amec.com](http://www.amec.com)

---