CARBON CAPTURE & STORAGE INTERACTIVE

EPSRC
Pioneering research and skills

The EPSRC awarded the School of Engineering at the University of Edinburgh (UoE) funding worth **£93,338** (EP/G02037X/1) to build an interactive demonstrator (Feb 2009 to May 2011) to communicate visibly the concepts of carbon capture and storage (CCS) technologies.

CONCEPTS

The Interactive conveys to the general public and to school children **three main concepts**:

1 The effects of too much CO_2 in the environment, causing climate change and ocean acidification.

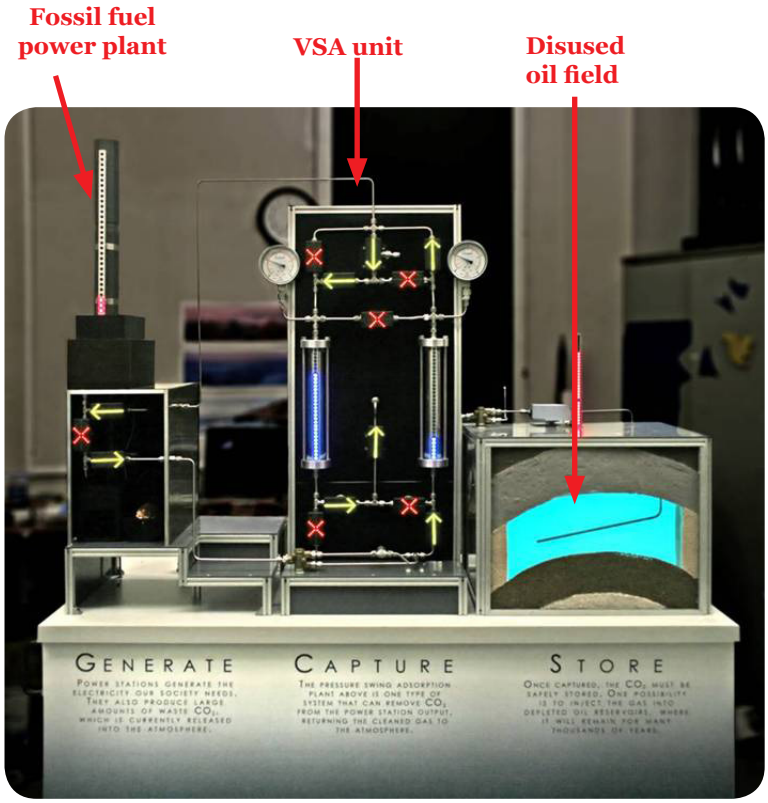
2 Technologies exist for capturing CO_2 at the power plant and the associated separation processes.

3 Control methods to store CO_2, e.g. making biofuel and geological burial.

AIMS

--> To use the CCS Interactive in the public-engagement activities of the Scottish Centre for Carbon Storage (www.geos.ed.ac.uk/sccs).

--> To incorporate the CCS interactive as part of the SCI-FUN Science and Technology Roadshow, which tours Scottish schools (www.scifun.ed.ac.uk).



CCS Interactive with Vacuum Swing Adsorption unit for carbon capture

See a short film of the Interactive in action at:
www.eng.ed.ac.uk/carboncapture/projects.html

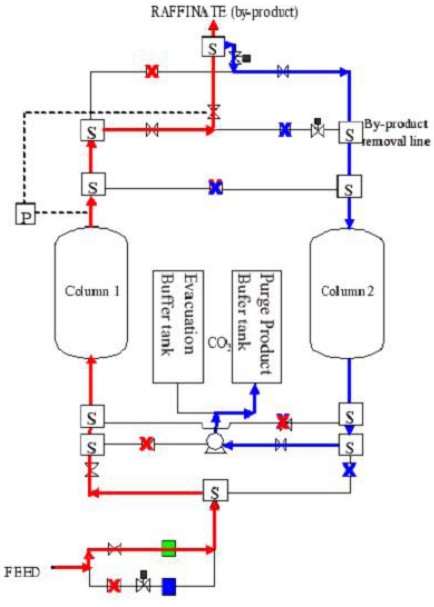
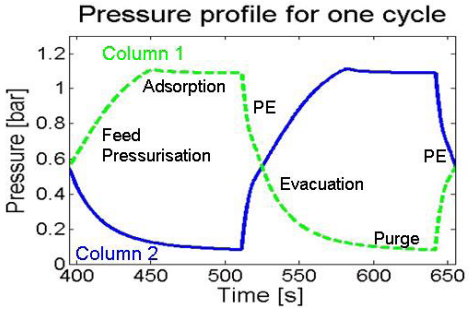


Diagram of the Skarstrom Cycle
red line = adsorption
blue line = purge

The VSA unit of the Interactive is a two-column Skarstrom cycle. The Skarstrom cycle has two main cycle steps: high-pressure adsorption and low-pressure purge. We are in the process of developing a numerical simulation of this cycle in order to validate our models and carry out an optimisation study.



PEOPLE INVOLVED AT SCI-FUN:
- Dr Patricia Erskine: Principal Investigator
- Stuart Dunbar: Roadshow manager
- Peter Reid: Designer of interface and programme
- Mark Reynolds: Technician who built the Interactive

PEOPLE INVOLVED IN THE TECHNICAL DESIGN OF THE INTERACTIVE AT UOE:
- Prof. Stefano Brandani & Dr Hyungwoong Ahn - School of Engineering (CARBON CAPTURE)
- Prof. Stuart Haszeldine - School of Geosciences (CARBON STORAGE)