



Carbon Capture & Storage - Resources

Thank you for downloading this Carbon Capture & Storage resource from the *GeoBus* website.

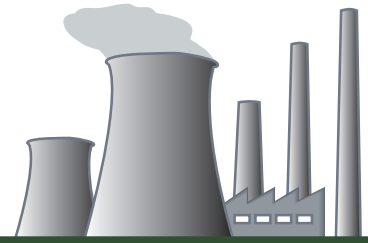
This resource pack was developed in partnership with [The Crown Estate](#), with support from [The Global CCS Institute](#), [Royal Dutch Shell](#) and [SCCS](#). Special thanks are due to Megan O'Donnell and Katy Relp for their involvement. These resources, and further carbon capture and storage education materials can be found on the [CO₂ degrees challenge](#) website.

The development of this resource would not have been possible without the generous support of the *GeoBus* sponsors, which we gratefully acknowledge.



Earth & Environmental Sciences





4. Investigating CCS Projects: Past, Present and Future

Investigating CCS Projects: Past, Present & Future

Teacher Notes



Activity Description	The students investigate CCS projects in planning, completed and in action all over the world.
Time	1 hour
Learning Outcomes	<ul style="list-style-type: none">To understand the scale of global CCSTo increase their awareness of the circumstances of past, present, and future CCS projects
Student Organisation	Individual / Pairs
Materials Needed	Computer and internet access, State of CCS: Student Worksheet

The students should visit the Scottish Carbon Capture and Storage Global CCS Map [<http://www.sccs.org.uk/expertise/global-ccs-map>] and work through the questions on the worksheet in this booklet.

The answers to the questions are below (correct at July 2015). Work through the sheet with the students discussing their answers.

Answers

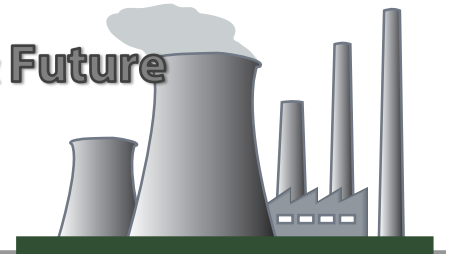
1. North America.
2. Longyearbyen, Svalbard. \$110million.
3. Not enough money. Poor public reception to project.
4. Sleipner, offshore Norwegian North Sea, Norway: Saline formation.
K12-B, offshore Netherlands North Sea, Netherlands: Depleted oil and gas reservoir.
5. Power stations.
6. Saline formations.
7. Because the company can offset the cost of CCS by selling the recovered fuel.



Extension Task:

The final question on the sheet can be extended for fast-working students. The questions asks the students to choose a site and write a report as if they were prospecting their chosen site for CCS. To extend the task, request that the report is presented in a formal style as if it were for a real energy company.

Student Worksheet



! As of July 2015 there are 55 CCS projects in planning, preparation and in action worldwide
This exercise aims to familiarise you with the locations, types of site and size of storage available.

To complete this activity you will need to access to the Scottish Carbon Capture and Storage Global CCS Map, found online here:

<http://www.sccs.org.uk/expertise/global-ccs-map>

■ Spend some time familiarising yourself with the map and what it can tell you, before moving on to answer the following questions:

1. Which continent which boasts the most CCS sites in operation?

2. Name the most northerly CCS site on the map. What is the project estimated to cost overall?

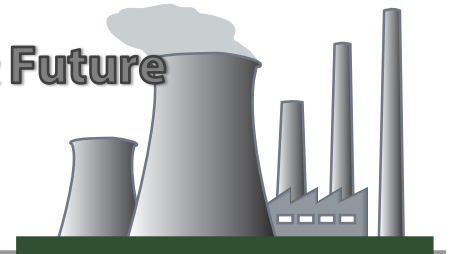
3. On the very east of the map find New Zealand, and the cancelled Southland Coal to Fertiliser Project. What are the two main reasons why this project was cancelled?

4. Locate the two operational CCS projects closest to the UK. What kind of rock formations do these use for storage?

5. Select the 'Source' button on the map to only show the emissions source. In the UK, what is the major source of CO₂ that is stored?

Investigating CCS Projects: Past, Present & Future

Student Worksheet



6. Select the 'Storage' button on the map to only show the type of geological storage available. What type of formation is the most common for storing CO₂ in Europe?

7. EOR stands for enhanced oil recovery. In the USA many CCS sites inject CO₂ to force remaining oil reserves out of low-running reservoirs. Why might this be an advantage to a site?

8. Choose a project from anywhere in the world that is either operational or in planning. Write a summary of its features as if you were reporting back to your company about a prospective site with your findings.

Project name: _____

Summary: _____
