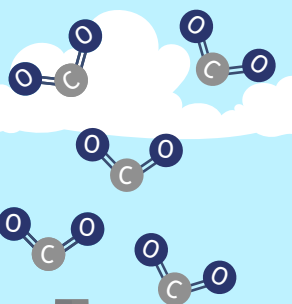



Carbon capture and storage



Fossil fuels are burned in power plants to generate electricity, and in other industrial processes. This produces carbon dioxide (CO₂), a greenhouse gas which warms the atmosphere and contributes to anthropogenic climate change.

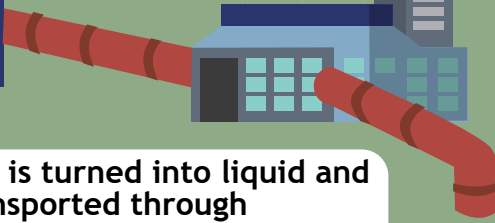
Carbon capture and storage (CCS) is a technology that removes carbon dioxide, CO₂, from the atmosphere and stores it deep underground in rock formations. Implementing CCS rapidly and widely will help to reduce our increasing atmospheric CO₂ concentrations and help to mitigate dangerous levels of climate change. Geoscientists are needed to develop and implement CCS technology, and will therefore be crucial in meeting the UN Sustainable Development Goals.




1 Instead of releasing these CO₂ emissions into the atmosphere, CCS technology can capture a large proportion of CO₂ produced in electricity generation and industrial processes.



The Geological Society supports the UN Sustainable Development Goals

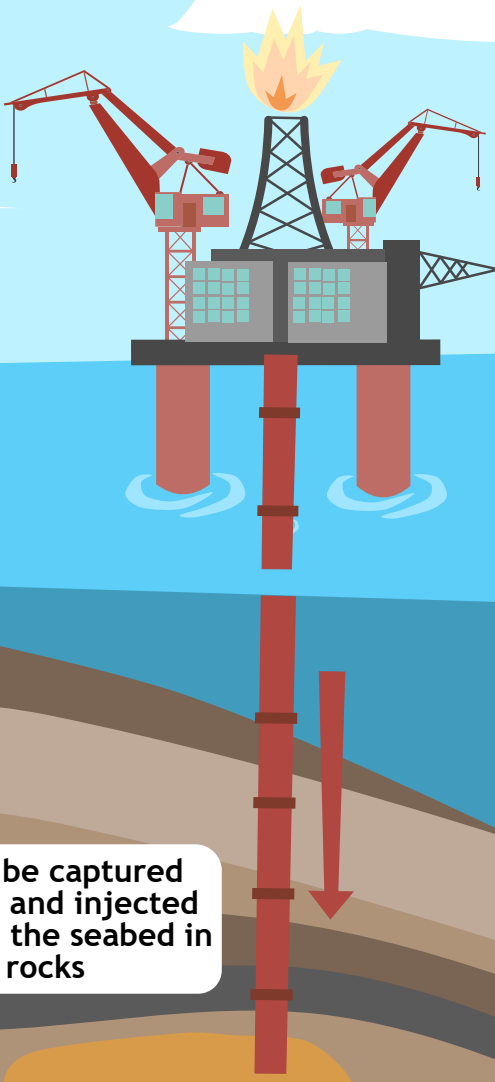


2 CO₂ is turned into liquid and transported through pipelines.



4 Sensors are used to monitor the CO₂ to ensure that it is stored permanently.

3 CO₂ is pumped underground to a depth of several kilometres and safely stored in selected geological rock formations - usually a depleted oil field or a saline aquifer (rock able to store water). This rock formation must lie beneath an impermeable seal, known as a cap rock, so that the CO₂ can't seep out. Over time the stored CO₂ forms chemical compounds with the surrounding minerals or brine.



CO₂ can be captured offshore and injected beneath the seabed in suitable rocks

Cap rock
Storage rock