FACT SHEET

CARBON CAPTURE AND STORAGE: OVERVIEW

WHAT IS CARBON CAPTURE AND STORAGE?

Carbon dioxide (CO_2) is emitted when fuels such as coal, oil and natural gas are used. Carbon capture and storage (CCS) is a process used to prevent these CO_2 emissions from entering the atmosphere and contributing to climate change.

CCS captures CO_2 at a power station or industrial facility such as a steel, LNG or cement plant. The captured CO_2 is then stored safely and permanently in deep underground geological structures, or by other physical, chemical or biological means.

CCS also mimics natural examples where gases, including CO_2, have been trapped in deep geological structures for millions of years.

Carbon capture and storage is focused on stationary sources as it is not yet possible to capture CO_2 from mobile sources such as cars, trucks and aeroplanes.

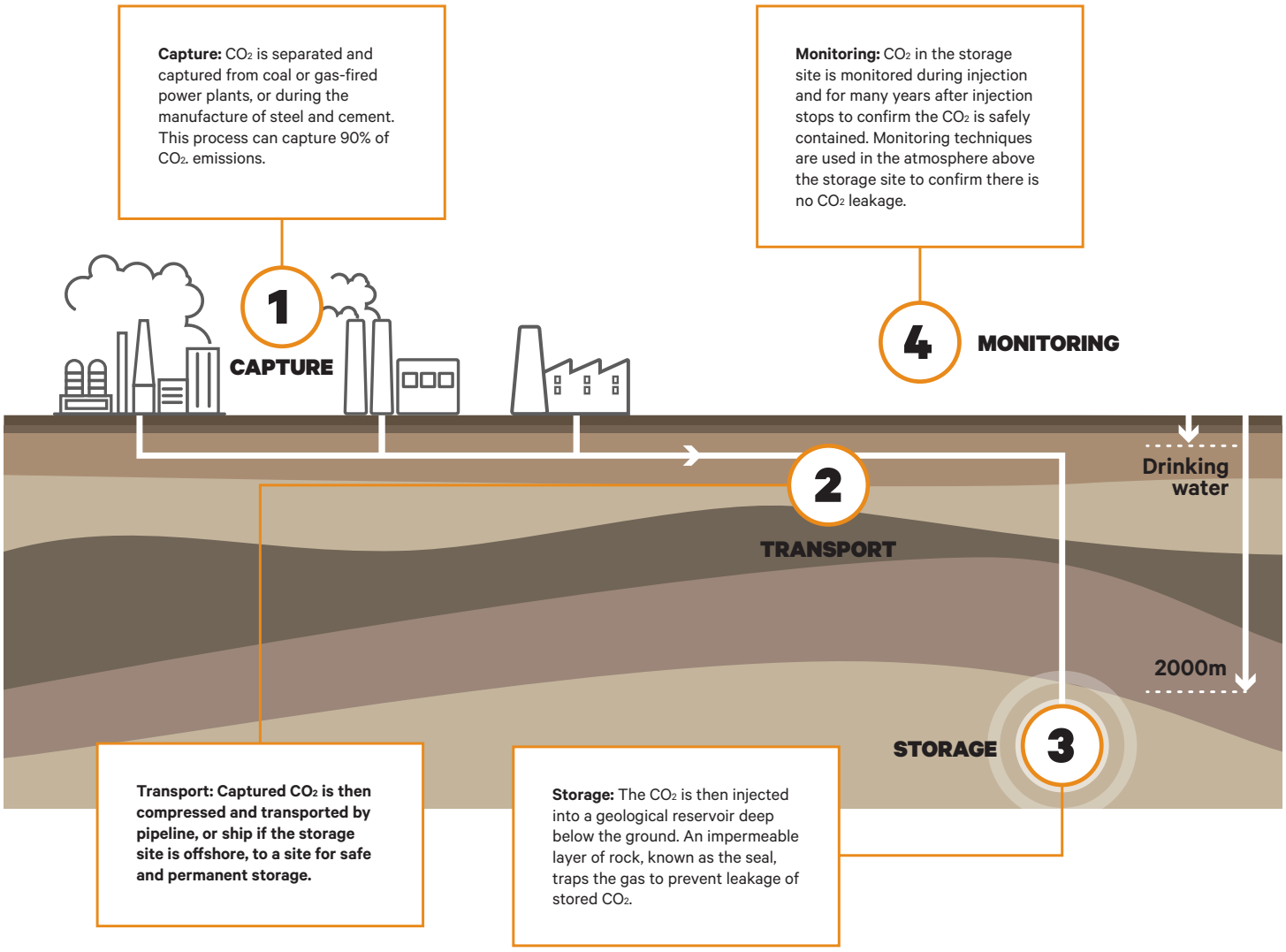
HOW DOES THE CCS PROCESS WORK?

CCS is a proven technology which includes four stages:

1. Capture: CO_2 emissions are separated ('captured') from the stream of gases released from the use of fossil fuels.
2. Transport: the captured CO_2 is compressed to a liquid-like state so that it can be transported via pipeline, rail, ship or truck to a suitable underground geological structure.
3. Storage: the compressed CO_2 is injected deep underground where it will remain, safely, permanently, and well-monitored, in a process called geosequestration.
4. Monitoring: CO_2 in the storage site is monitored during injection, and for many years after injection stops, to confirm the CO_2 is safely contained. Monitoring techniques are used in the atmosphere above the storage site to confirm there is no CO_2 leakage.

FAST FACTS

- **CCS can achieve big emissions reductions from coal-fired power stations.**
- **CCS is a proven technology used in many parts of the world.**
- **The storage of CO_2 is safe and permanent.**



IS THE TECHNOLOGY PROVEN?

Yes. CCS is already being used successfully across the world. CO_2 capture, transport and storage technologies are used in oil and gas sector projects in Canada (Weyburn-Midale) and Norway (Sleipner), where CO_2 has been injected since 1996 and 2000 respectively. Two coal sector CCS projects have commenced operation recently: Boundary Dam (Canada, 2014) and Petra Nova (USA, 2017).

CARBON CAPTURE AND STORAGE IN AUSTRALIA

There is big potential for CCS to be used commercially in Australia. When it commences CO_2 injection, the Gorgon Project in Western Australia will be the largest project of its type in the world. Other Australian projects have successfully demonstrated CCS technology: the Callide Oxyfuel project capturing CO_2 at an operating power station in Queensland, and the CO2CRC injecting 65,000 tonnes of CO_2 into a depleted gas field in Victoria's Otway Ranges.

FIND OUT MORE

The Global CCS Institute
globalinstitute.com

CO2CRC
co2crc.com.au