

Carbon capture and storage

Fast facts



The world needs to capture **more than 5.6 billion tonnes of CO₂ every year by 2050¹**



Carbon capture and storage (CCS) is a **large-scale emissions reduction solution**



Santos' CCS projects are expected to achieve **large-scale emission reductions at low cost**



Australia has carbon storage capacity to inject more than **half our annual emissions** for at least 100 years²



There are more than 20 large-scale operational CCS projects around the world, storing about **40 million tonnes per annum of CO₂**

What is carbon capture and storage?

Natural gas is an abundant, reliable and low-cost energy source that is used in power generation, cooking and heating, powering vehicles, and as a key ingredient in manufacturing everyday materials used to build our homes and appliances. It is formed naturally and is trapped in rock formations deep underground for millions of years.

When natural gas is produced or used for industry or to create energy, carbon dioxide (CO₂) is produced as a by-product. Carbon capture and storage (CCS) is the process of capturing CO₂ then safely storing it deep underground, often in the reservoirs that previously held oil and gas in place for tens of millions of years.

CCS technologies have been in operation since the 1970s and are proven as a large-scale CO₂ storage solution. There are currently more than 20 large-scale CCS projects in operation around the world, storing about 40 million tonnes per year of CO₂.³ This is equivalent to almost all the annual carbon emissions of the entire Australian passenger vehicle fleet.⁴



The world needs affordable and reliable ways to provide the energy to power our homes and businesses while minimising greenhouse gas emissions.

CCS provides a way to address emissions from existing assets, from hard to abate sectors and provides a cost-effective pathway to scale up low-carbon hydrogen production and atmospheric CO₂ removal.

¹ International Energy Agency, World Energy Outlook, 2019

² Carbon Storage Taskforce, National Carbon Mapping and Infrastructure Plan - Australia, 2009

³ Global CCS Institute, Global Status of CCS, 2021

⁴ Australian Bureau of Statistics, Survey of Motor Vehicle Use, Australia, 12 months ended 30 June 2018

Moomba carbon capture and storage

Why carbon capture and storage?

The IEA's Executive Director, Fatih Birol, emphasised that reaching net-zero goals without CCS will be almost impossible. To reach climate goals, the world needs to capture more than 5.6 billion tonnes of CO₂ globally every year by 2050⁵.

Early deployment of CCS is essential to drive down costs and establish infrastructure in order to reach this milestone⁶. It's critical that policy support in the near term is directed towards the development of innovative technologies and supporting infrastructure⁷.

Australia has a natural competitive advantage in CCS with known high quality, stable geological storage basins and expertise gained though more than half a century of oil and gas production.

With scale and experience, CCS is expected to become cheaper and more competitive, creating the potential to deliver large scale emissions reductions for existing sectors including resources, energy and manufacturing, and for new industries such as large scale hydrogen production.

Did you know?

The Moomba CCS Project is expected to store 1.7 million tonnes of CO₂ each year. That's the equivalent of taking 700,000 cars off the road⁸.

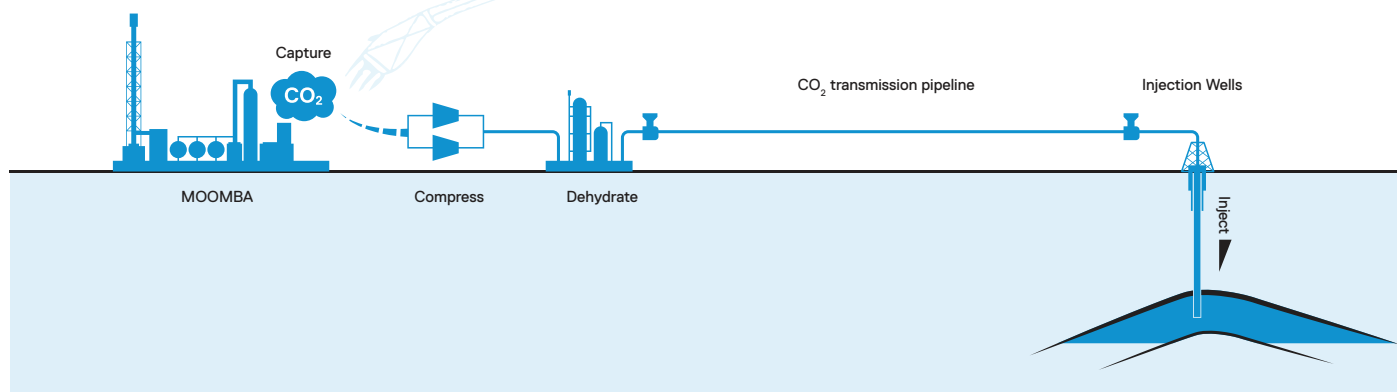


What is the Moomba CCS Project?

Santos' Moomba CCS Project is expected to capture CO₂ already separated from natural gas at the Moomba Gas Plant in South Australia. It also provides an opportunity to launch further projects to store other sources of CO₂ (such as from direct air capture) and it enables low-carbon hydrogen production.

As part of the design phase of this project, Santos successfully completed a CO₂ injection trial in 2020.

The Cooper and Eromanga Basins in South Australia and Queensland have the potential for injection of over 20 million tonnes of CO₂ per year for more than 50 years⁹. This capacity is equivalent to taking half of Australia's passenger vehicles off the road, every year¹⁰.



⁵ International Energy Agency, World Energy Outlook, 2019

^{6,7} International Energy Agency, World Energy Outlook, 2021

⁸ Australian Bureau of Statistics, Survey of Motor Vehicle Use, Australia, 12 months ended 30 June 2018

⁹ Carbon Storage Taskforce, National Carbon Mapping and Infrastructure Plan - Australia 2009

¹⁰ Australian Bureau of Statistics, Survey of Motor Vehicle Use, Australia, 12 months ended 30 June 2018