



# CARBON CAPTURE AND STORAGE: BENEFITS

## WHAT IS CARBON CAPTURE AND STORAGE?

Carbon dioxide (CO<sub>2</sub>) 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<sub>2</sub> emissions from entering the atmosphere and contributing to climate change.

CCS captures CO<sub>2</sub> at a power station or industrial facility such as a steel, LNG or cement plant. The captured CO<sub>2</sub> is then stored safely and permanently in deep underground geological structures, or by other physical, chemical or biological means.

## WHY USE CARBON CAPTURE AND STORAGE?

World energy demand forecasts indicate that coal will continue to play a significant role in energy supply, with coal-powered generation projected by the International Energy Agency to be 26 per cent of all electricity produced by 2040 and South-East Asia tripling coal-fired electricity.

Achieving international emissions reduction goals requires major cuts in global CO<sub>2</sub> emissions while maintaining an affordable and reliable energy supply, provided partly by fossil fuels, including coal with CCS.

## CCS DELIVERS RELIABLE ELECTRICITY SUPPLY WITH LOWER EMISSIONS

CCS allows electricity to be generated using coal with lower CO<sub>2</sub> emissions, which is essential to meet global demand for reliable and affordable electricity, while meeting international emissions reduction goals.

## FAST FACTS

- ⊕ Coal with CCS allows electricity to be generated with lower emissions.
- ⊕ CCS can be retrofitted to existing power stations.
- ⊕ CO<sub>2</sub> storage is safe, with leakage over 1000 years limited to less than one per cent.



## CCS CAN BE USED WITH EXISTING INFRASTRUCTURE

CCS can be retrofitted to existing power stations to generate low-emission electricity. Because the power station and associated coal supply and grid connection infrastructure already exist, implementing CCS costs less than building a new power station. The Callide Oxyfuel Project, funded in part by Australia's COAL21 industry fund, showed that carbon capture technology could be retrofitted to an existing power station to produce electricity with almost no emissions.

## CCS IS SAFE

Gases including CO<sub>2</sub> have been injected into deep geological formations as a short-term storage measure for many years. Extensive modelling of CO<sub>2</sub> storage shows that leakage over 1000 years can be limited to less than one per cent. Read more at [sciencedirect.com](https://www.sciencedirect.com)

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