

NET ZERO-EMISSION TARGETS WILL REQUIRE WORLDWIDE CCUS DEPLOYMENT

Carbon capture, utilisation and storage (CCUS) is an essential solution that prevents CO₂ from being released into the atmosphere. Enhanced cooperation on CCUS between governments, industry and investors will be key to drive commercialisation and deliver the Paris Agreement goals.

WHY DO WE NEED CCUS TO ACHIEVE THE PARIS AGREEMENT OBJECTIVES?

The IEA has reported that meeting the Paris goals is **'practically impossible' without CCUS**. This technology reduces greenhouse emissions while enhancing energy security and boosting economic prosperity.

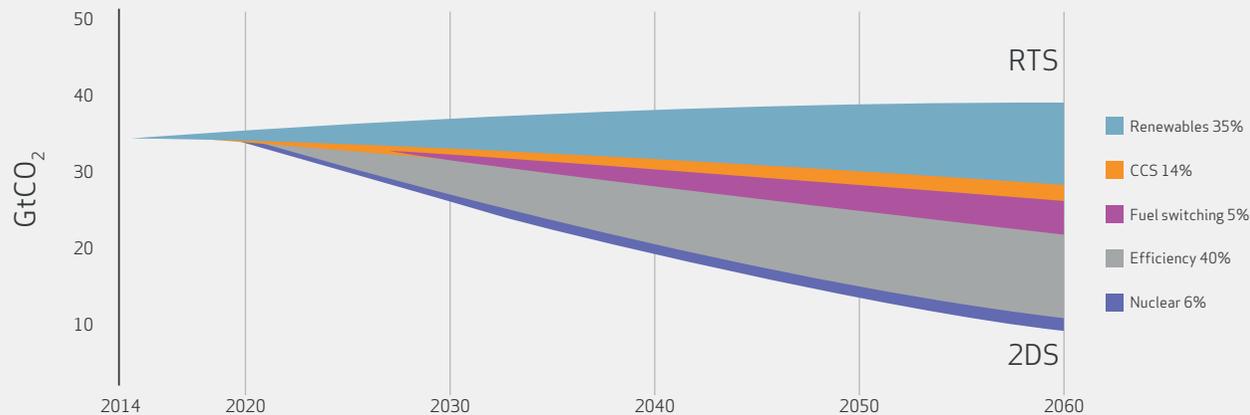
The IEA also estimated that **14%** of emission reductions by 2060 for a 2°C pathway will have to come from CCUS.

The G20 has recognised the opportunities offered by the development of innovative, clean and efficient technologies, such as CCUS.

3 out of 4 pathways in the latest Intergovernmental Panel on Climate Change (IPCC)'s *Special Report on Global Warming of 1.5°C* give prominence to CCUS.

Meeting a 2°C goal would be **138%** more expensive without CCUS, which equates to 3% of cumulative global GDP through 2100.

Contribution of technologies to annual emissions reductions



Source: International Energy Agency, Energy technology Perspectives, 2017

WHAT IS CCUS?

CCUS is a technology that captures CO₂, which can then be injected and stored in a rock formation or used by various end-users, including the oil industry for enhanced oil recovery.

WHERE ARE WE WITH CCUS?

To date, there are **23** CCUS plants operating or under construction – capable of storing 40 million tonnes of CO₂ per annum – with another 28 pilot or demonstration projects.

However, **the world is still off track** from the estimated 2,732 facilities needed by 2050 to achieve the objectives of the Paris Agreement.

Between 2010 and 2016, \$10 billion was invested in large-scale CCS projects compared to almost **\$2.3 trillion** in renewable technologies.

80% of these investments in CCS came from the private sector.

WHAT ARE THE LATEST CCUS DEVELOPMENTS?

SaskPower's Boundary Dam – the world's first large-scale integrated CCS project from a coal-fired power plant – has captured 1 million tonnes of CO₂ per year since 2014.

Construction began in 2017 on the **Yanchang CCUS project** at a coal-to-chemicals facility capable of capturing 400,000 CO₂ tonnes per year.

There are **seven other full-chain CCUS projects** in construction or early development in China that use coal as a feedstock.

The Petra Nova Carbon Capture project – the world's largest post-combustion carbon capture facility – can remove up to 1.6 million tonnes of CO₂ a year.

The unsubsidised, fully commercial **Carbon Clean Solutions CCUS facility** has operated since 2015 in the port of Tuticorin and has significantly reduced the costs associated with capturing CO₂.

Since 2006, Australian coal producers have supported several CCUS projects by establishing **COAL21**, an initiative raising funds through a voluntary levy on coal production.

The **Osaki CoolGen Project** is developing an integrated coal gasification fuel cell combined cycle pilot combined with demonstration of carbon capture.

WHAT IS NEEDED TO ENHANCE COOPERATION ON CCUS?

Supportive policy measures and well-designed frameworks with associated incentives to drive future investment in this area.

CCUS to benefit from **policy parity** alongside all other low-emission technologies.

National long-term climate mitigation plans to help **communicate the value and role of CCUS in lowering global emissions.**