

# CCS MYTHBUSTERS

## DISPELLING MYTHS AROUND CARBON CAPTURE AND STORAGE (CCS)

### MYTH

CCS is unproven.

### FACT

CCS technology has been in use for more than 50 years, and around 300 million tonnes of CO<sub>2</sub> have already been successfully captured and injected underground.

### THE PROOF

- There are currently 29 CCS facilities in operation around the world, capturing and storing 40 million tonnes of CO<sub>2</sub> per year, which is more than the annual energy-related emissions of many countries including Denmark, Ireland and New Zealand.<sup>1</sup>
- There are commercial-scale CCS facilities in operation across a wide range of emission sources including: gas processing, ethanol, fertiliser, steel and hydrogen production, as well as in power generation.
- While there have been some well-publicized setbacks on individual CCS projects, these issues are no different than those facing other large industrial projects and overall CCS has proven to be technically and economically viable.

### MYTH

CCS is unsafe.

### FACT

The capture, transport, and storage of CO<sub>2</sub> is well regulated and empirically proven to be safe.

### THE PROOF

- CO<sub>2</sub> has been safely and reliably transported in the United States since 1972 with zero fatalities over its 50-year history.<sup>2</sup>
- Even in the unlikely event of a leak occurring during transport, there is very little human health risk when pure CO<sub>2</sub> is released into ambient air because it is not flammable or explosive, nor is it toxic to humans unless the release is catastrophic – very rapid and in extremely high quantities.
- The likelihood of a leak occurring once the CO<sub>2</sub> is underground is very low. According to the Intergovernmental Panel on Climate Change (IPCC), CO<sub>2</sub> stored in appropriately selected and managed geological reservoirs is 99% likely to remain there for over 1,000 years.

### MYTH

CCS is too expensive.

### FACT

The cost of CCS is quickly declining as the breadth of deployment increases and additional policy and financial incentives are made available.

### THE PROOF

- CCS has seen rapid growth and decreased costs in recent years thanks to new business models, and increased government and private sector R&D.
- With more than 140 CCS facilities currently in development globally, costs are projected to decline even further with economies of scale.
- The IPCC found that it would be, on average, 138% more expensive to reach global climate goals without the deployment of CCS.<sup>3</sup>

<sup>1</sup> IEA Atlas of Energy

<sup>2</sup> [https://dualchallenge.npc.org/files/CCUS-Chap\\_6-030521.pdf](https://dualchallenge.npc.org/files/CCUS-Chap_6-030521.pdf)

<sup>3</sup> Intergovernmental Panel on Climate Change, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

## MYTH

CCS only prolongs the life of fossil fuel industries and delays the world from reaching global climate goals.

## FACT

CCS is a necessary tool for reducing the emissions of fossil fuels already in use and putting the world on a path to net-zero.

## THE PROOF

- CCS is an essential tool that we can deploy today to reduce emissions from the global fossil fuel power fleet we already have. This is critical because without CCS retrofit or early retirement, coal, and gas-fired power stations will continue emitting CO<sub>2</sub> at rates that will consume 95% of the International Energy Agency's (IEA) Sustainable Development Scenario carbon budget by 2050.
- Even in a best-case scenario where the world rapidly reduces fossil fuel consumption and halts any additional development, the IPCC and the IEA both agree that CCS will still play an important role in reaching climate targets because it is the only option for decarbonising several non-energy sectors that are fundamental to modern society, such as cement, steel, chemical, and fertiliser production.
- CCS is also the main technology to underpinning carbon removal from the atmosphere via direct air capture (DAC) and Bioenergy with CCS (BECCS) technologies.

## MYTH

There is not enough space to safely store all the CO<sub>2</sub> captured by CCS projects.

## FACT

The world has more than enough capacity for CO<sub>2</sub>.

## THE PROOF

- According to the 2021 CO<sub>2</sub> Storage Resource Catalogue<sup>4</sup>, there are more than 14,000 gigatonnes of storage resources across the entire catalogue. To put this into context, according to the IEA, global energy-related CO<sub>2</sub> emissions stood at just 33 gigatonnes in 2021.<sup>5</sup>
- Storage resources can be found in almost every nation in the world, an important factor enabling the global deployment of CCS.

<sup>4</sup> <https://CO2storageresourcecatalogue.com/>

<sup>5</sup> <https://www.iea.org/reports/global-energy-review-2021/CO2-emissions>

**FIND OUT MORE AT [GLOBALCCSINSTITUTE.COM](http://GLOBALCCSINSTITUTE.COM)**



GLOBAL CCS  
INSTITUTE

**CONTACT**  
STAY CONNECTED



[global-ccs-institute/](https://www.linkedin.com/company/global-ccs-institute/)



GlobalCCS