



ABOUT THE INSTITUTE

The Global CCS Institute works collaboratively to build and share the expertise necessary to make carbon capture and storage (CCS) a commercial reality. As an independent body, we advocate for CCS as part of the portfolio of technologies required to reduce the world's greenhouse gas emissions.

We are a centre of excellence for CCS knowledge. Continuing to build and share this knowledge will lead to the acceleration of the development and deployment of CCS, globally.

WHY CCS?

Climate change

Combating climate change requires urgent action on the part of many. Research has shown that since the beginning of the industrial era in late 18th Century, levels of CO₂ in the atmosphere have increased well beyond previous trend rates. Unless the amount of carbon dioxide (CO₂) and other greenhouse gases entering the atmosphere can be reduced dramatically and then stabilised, the temperature of the earth will continue to rise. This rise in temperature will cause the climate to change, sea levels to rise, and ocean and land environments to be adversely affected.

What is CCS?

CCS (also known as 'carbon sequestration') is a suite of technologies that prevent large quantities of CO₂ from being released into the atmosphere from the use of fossil fuel in power generation and other industries.

CCS can make an essential contribution towards greenhouse gas reduction efforts, when partnered with other low-carbon technologies. It can reduce the emission of CO₂ from industries and power stations that use fossil fuels. CCS involves:

- collecting or capturing the CO₂ produced at large industrial plants using fossil fuel (coal, oil and gas);
- transportation to a suitable storage site; and finally,
- pumping it deep underground to be securely and permanently stored in rock.

Why do we need CCS?

At the same time as the Earth is warming up due to rising greenhouse gas emissions, world energy demand is projected to grow by more than 40 per cent over the next two decades. At the same time, electricity sourced from fossil fuels accounts for more than 40 per cent of the world's energy-related CO₂ emissions. A further 25 per cent comes from large-scale industrial processes such as iron and steel production, cement making, natural gas processing and petroleum refining.

Addressing these emissions and delivering cost-competitive technology to achieve this is vital if the challenge of emission reduction and economic growth is to be met, and CCS technologies are the only available tool for reducing such emissions from existing sources. In fact, CCS can reduce emissions from power plants and factories to almost zero. According to the International Energy Agency (IEA), some 20 per cent of the total greenhouse gas emission reductions necessary between now and 2050 can be achieved through CCS, if the world manages to get some 3,000 projects off the ground over the next four decades; a goal the Institute is working towards.

What about renewable energy sources?

Given the large, easily accessed and low-cost reserves of fossil fuels, it is clear that they will continue to be used to generate power and support industry for many decades to come. The Institute advocates for CCS as one of the many options that will be used to stem these emissions, and making it a commercial, cost-competitive technology as fast as possible is the fundamental reason that the Institute exists.



WHAT WE DO

We bring together projects, policy-makers and researchers in an effort to overcome challenges facing CCS. From there, we create channels through which to learn from one another, to ensure a smooth and rapid roll-out of this important technology.

Sharing knowledge

We use the lessons learnt by CCS projects around the world to provide information to a broader audience to enhance understanding of technical, economic, financial, commercial, and engagement issues facing CCS.

In aid of this, we host a progressive digital knowledge sharing platform to assist our Members and the broader CCS community to network, collaborate and share information more effectively. This platform also provides the opportunity to directly contribute CCS 'know how', and build a repository for project experience and other CCS information.

Fact-based advocacy

We use facts to inform and influence domestic and international low-carbon policy, as well as increasing the awareness of the benefits of CCS and the role it plays.

A major piece of our work in this area is the annual publication of the *Global Status of CCS*, a report constituting the only existing 'stocktake' of CCS projects and their developments, worldwide.

Assisting projects

We also work to bridge knowledge gaps between CCS demonstration projects, whereby we develop and implement project-specific solutions which have most benefit to early-stage projects.

In aid of this, we have constructed, and now maintain a comprehensive view of developing CCS demonstration projects, their progress and barriers. The Institute uses analysis of this database as guidance in support of its other activities.

MEMBERSHIP

We have built a collaborative international Membership, made up of more than 330 government, industry, non-government and research organisations from around the world. The Institute's Membership constitutes more than 80 per cent of the world's CO₂ emitters from energy and industrial sources.

Members can influence our work program via regular meetings, participation on committees, and direct engagement. They can also directly benefit from the activities which will shape and influence the prospects for CCS.

PARTNERSHIPS

We have a number of active partnerships in place with key players in the CCS arena, including the International Energy Agency (IEA), Asian Development Bank (ADB), World Bank, The Climate Group, Clinton Climate Initiative, and Carbon Sequestration Leadership Forum (CSLF).

Through these partnerships, we extend our influence in addressing challenges facing the commercialisation of CCS.

For more information about the Global CCS Institute, visit:
www.globalccsinstitute.com