

Good to know about

Carbon Capture and Storage



Did you know that ...

Danish subsoil can accommodate up to 22 billion tonnes of CO₂, equivalent to 500-1000 years of total Danish emissions at current levels.

Source: National Geological Survey of Denmark and Greenland (GEUS)



What is CCS?

CCS or Carbon Capture and Storage is the collective term for a range of technologies that can capture and store CO₂ underground. CCS is seen as a crucial tool for achieving the significant CO₂ reductions necessary to mitigate climate change.



How does CCS work?

Essentially, the technology entails the capture of CO₂ gas from point sources such as the chimney stacks of power plants, biogas plants and cement factories. The gas is subsequently liquefied and permanently stored underground in selected sites at a minimum depth of 800 metres.



Why is CCS necessary?

CO₂ is one of the main causes of global warming, so capture and storage is a crucial tool for reducing CO₂ emissions into the atmosphere. The UN Intergovernmental Panel on Climate Change estimates that approximately 1,200 billion tonnes of CO₂ shall be captured and stored by the year 2100 in order to achieve the climate goals.



Did you know that ...

The UN Intergovernmental Panel on Climate Change and the International Energy Agency both view CCS as an indispensable technology for achieving the climate targets of the Paris Agreement.

Source: Danish Energy Authority



How advanced are we in the development of the technology?

The capture and storage of CO₂ underground has been deployed for more than 40 years in such sectors as the oil industry, which has been pumping CO₂ into underground oil fields to retrieve residual deposits of oil.

The Norwegian Sleipner Project, the world's first commercial CCS project, has been in operation since 1996. Since then, countries such as the Netherlands, Belgium and the UK have also broken ground on large CCS facilities.



Did you know that ...

there were 13 active CCS plants distributed around the world in 2010, and by 2022 that number had risen to 42.

Source: National Geological Survey of Denmark and Greenland (GEUS)



What is the timescale for the underground storage of CO₂ in Denmark?

In 2022, the Danish Energy Agency initiated the first-ever tender round for licenses to permit the exploration and utilisation of the subsoil in the North Sea specifically for the geological storage of CO₂. The second tender round opened at the end of 2023 and the winners of the tender for each onshore site are expected to be announced during 2024.

The exploration phase which is expected to take up to 6 years (potentially extended to 10 years) shall demonstrate among other things that storage can be achieved in a safe and environmentally sound way. Subsequently, permission can be granted to proceed with the storage project.



Did you know that ...

Aalborg hosted the international EU-sponsored conference CCUS Forum in 2023, attended by almost 500 participants from all over the world.

Source: European Commission



What role does Aalborg play in CCS?

Aalborg has been firmly put on the European map when it comes to CCS. Port of Aalborg and Fidelis New Energy concluded an agreement in 2023 for new large-scale CO₂ receiving facilities at the East Port in Aalborg, which from 2027 will receive up to four million tonnes of captured CO₂ annually.

Additionally, Denmark's largest CO₂ emitter, Aalborg Portland, initiated a pilot plant for CO₂ capture at the end of 2023, eventually enabling the capture of at least 400,000 tonnes of CO₂ from the cement producer's smokestacks.

Source: Danish Energy Authority

Would you like to know more? Then please contact us.



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