

Carbon Capture and Storage (CCS)

Minimizing the cost for CO₂ emitters



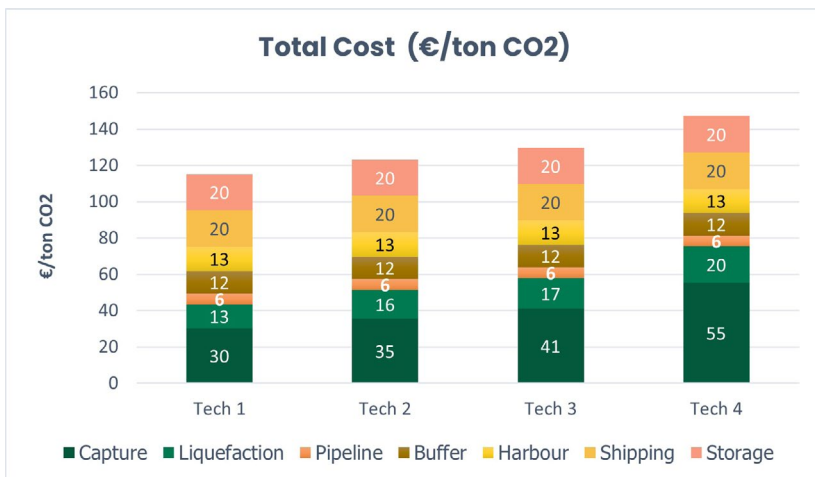
To meet pledges of reaching net zero and sustainability targets, operating plants will need to eliminate the release of carbon dioxide gas from their operations.

Our mission is to cut the cost of CCS for CO₂ emitters.

ABB is collaborating with Captimise to help CO₂ emitters to find the most suitable and cost-efficient technologies for the full chain from capture, liquefaction, buffer storage, transport to permanent storage or utilization.

The team brings specialist CCS knowledge and over 15-years experience of CCS projects in USA and Europe. This is combined with deep operating knowledge and understanding of assets in Power, Oil & Gas and Chemical sectors.

Below: Capture technology screening study - Captimise.



What we offer

Through this collaboration, ABB is able to offer CO₂ emitters with support throughout the energy transition journey, including:

- Capture technology screening studies and optioneering
- Feasibility studies
- RAPID project development and estimating
- Logistical studies
- Pre-FEED and FEED studies
- Owners engineer and EPCm support

The initial stages of any project are critical to its success. There are typically a number of alternative technologies or plant configurations that can satisfy the technical brief, however wider business objectives must also be taken into account in order to identify the optimal solution.

ABB's CCS screening study methodology allows the operator to evaluate multiple options during the early stages of a project with minimal impact on project cost. We work closely with operators to acquire a precise understanding of what the project must achieve. Our experienced CCS engineers will develop differing options and in conjunction with the client evaluate them against the stated project and business objectives.

Step 1 of your CCS journey is looking at the plant specification. ABB will work with the operator to define the main criteria for the design of the carbon capture plant and how it will integrate with your existing facilities.

Step 2 is CCS technology screening. The ABB and Captimise teams have worked on plant designs with the differing CCS technology options including Amines, Chilled Ammonia, HPC and Oxyfuel. We are totally independent of the suppliers so can provide an unbiased understanding of the technologies and their limitations.

In addition ABB's deep expertise in fired equipment can investigate the option to switch fuel gas feed from methane to hydrogen to eliminate the CO₂ generated from the combustion gases.

Benefits

Working with ABB's project and CCS engineers brings a range of benefits including:

- Unrivalled expertise of differing carbon capture technologies from projects delivered across Europe and USA
- A clear understanding of the technologies and the ability to compare costs; both Capex, Opex and cost per ton captured CO₂ between the technologies in the feasibility stage
- Accurate project scoping and definition
- FEED services specifically configured to support organizations operating in the high hazard industries
- Access to the full range of technical expertise under the one roof
- Focus on delivering business benefits from an operator's perspective
- Engineering specialists who can take a pragmatic, cost effective approach based on engineering judgement
- Accredited design processes that ensure high quality engineering and design deliverables

ABB has a Demonstration Unit for CO₂ capture. It can be ordered for different solvents:

- Amines
- Potassium Carbonate
- Chilled Ammonia

Why ABB?

ABB offer the complete solution; we can provide the CCS screening, feasibility right through to EPCm

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implementation ensuring you are able to meet your carbon reduction and sustainability objectives.

Our experienced specialists will apply their operational heritage to provide pragmatic advice and solutions. We are supported by Captimise who are specialists in CCS projects.

ABB provides professional engineers and designers with decades of experience in the delivery of FEED and project implementation. Our operational heritage means we have particular skills and knowledge in the delivery of CCS projects for retrofit on high hazard and brown field sites, using a tried and tested project process accredited to ISO 9001. We ensure that not only plant efficiency, but operability and maintainability are considered from the outset.

We maintain a focus on the key elements of the project to ensure it is accurately defined and the installed cost estimate does not significantly escalate when the project moves into later phases of development.