

The Case for a European CCS Bank

A competitive CCfD
auctioning mechanism
for the EU

Executive Summary

Carbon Capture and Storage (CCS) is broadly recognized as a key technology for industrial decarbonization. In order to meet its Green Deal objectives, the EU set an ambition of capturing 280 million tonnes of CO₂ per year by 2040 and 450 million tonnes by 2050, and the Net Zero Industry Act (NZIA) introduced an obligation of 50 MT CO₂ injection capacity.¹ Despite that, we are far from reaching a concrete commercial deployment of CCS projects.²

To decarbonize Europe's energy-intensive industries while maintaining industrial competitiveness, the large-scale commercial deployment of CCS is therefore essential. However, a market-based business model enabling the CCS value chain (Figure 1) is currently lacking. Without such a model, investments are at risk, and progress could be delayed.

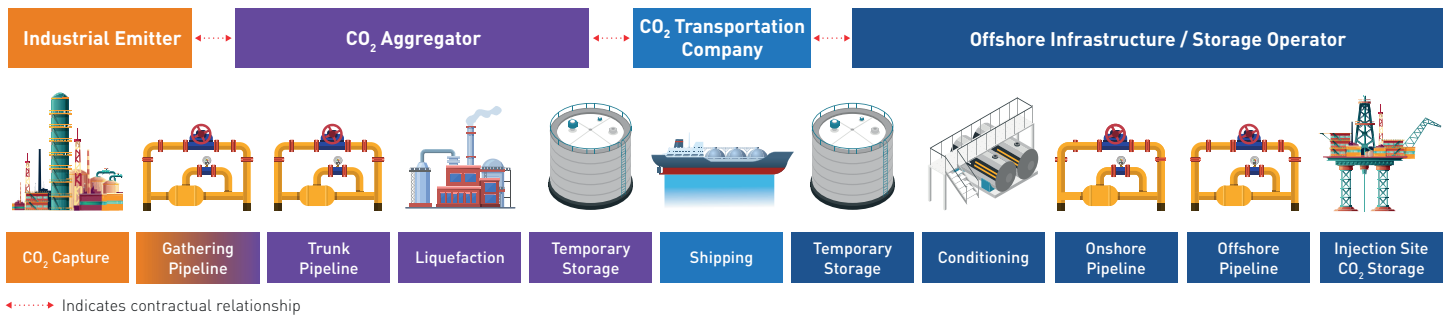


Figure 1 - Indicative Carbon Capture and Storage (CCS) value chain

These challenges are recognized in the Commission's Industrial Carbon Management (ICM) Strategy, which highlights the key role of Carbon Contracts for Difference (CCfDs) in providing "predictable revenue for project developers"³ through market-based funding mechanisms to close the gap with carbon pricing and to de-risk projects, at the early stage of market development.

As provided for in the Directive (EU) 2023/959 (Article 8a),⁴ we believe that developing a competitive, market-based auctioning scheme under the Innovation Fund – a *European Carbon Capture and Storage Bank* – similar to the existing Hydrogen Bank framework⁵ would be a first step to achieve these objectives. Not only would this kick-start CCS project developments, but it would also act as a model for Member States to follow, and a catalyst to further development.

IOGP Europe keeps contributing to this discussion⁶ by presenting a comprehensive series of papers outlining a strategy for the commercial development of the whole CCS value chain. This first paper describes the benefits of CCfDs as financial incentives for emitters; explains how these instruments can optimize the allocation of EU-Emission Trading System (ETS) auction revenues in a technology-neutral way; and outlines the functioning of the proposed European CCS Bank.

¹ [NZIA Regulation](#) included a 50 Mtpa of CO₂ injection capacity by 2030 to be made available by oil and gas companies.

² See also [IOGP Europe's interactive map and data](#) on the development of the CCS value chain in Europe.

³ Cit. Commission Communication, *Towards an ambitious Industrial Carbon Management for the EU*, [COM \(2024\) 62](#), 6 February 2024, p.20.

⁴ [Directive \(EU\) 2023/959](#) of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system (EU ETS Directive 2023 revision).

⁵ *Commission Communication on the European Hydrogen Bank*, [COM \(2023\) 156](#), 16 March 2023.

⁶ See IOGP paper on ["Creating a sustainable business case for CCS value chains – the needed funding and de-risking mechanisms"](#).

1. The need for a new European approach to CCS projects deployment

Without a sustainable business case supported by commercial agreements across the full CCS value chain, investments will be delayed, potentially limiting the EU's ability to keep in Europe and decarbonize its industries while remaining competitive, retaining jobs and fostering strategic industries.

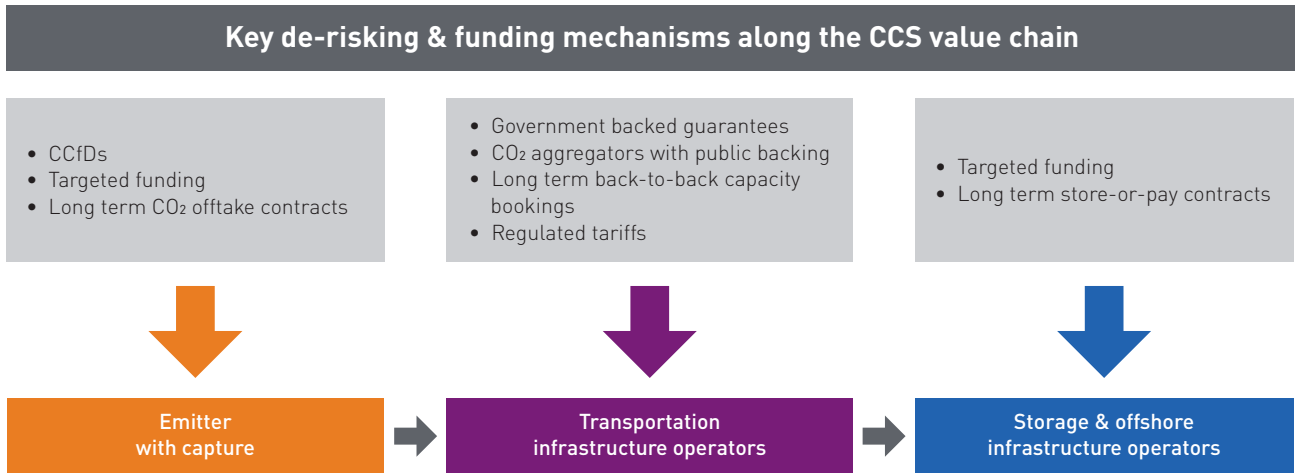


Figure 2 - Key funding and de-risking mechanisms along the CCS value chain

The discourse is now mature at the political level. For instance, the “Draghi report”⁷ highlights the need to harness and develop competitive decarbonisation technologies, leveraging the EU innovation potential and technical competitive advantage; and emphasises the role of CCfDs as a market-based hedging and subsidy scheme, implemented at the EU and/or Member State level through competitive tendering for financing the decarbonisation.⁸ It highlights that existing funds and instruments are insufficient to drive European industry in its path towards the common net-zero targets.⁹ Finally, the next Commission has publicly taken responsibility to deliver on these objectives.

The 2023 revision of the EU ETS has called for an evolution of the Innovation Fund: “*The Innovation Fund may in accordance with paragraph 8a support projects through competitive bidding, such as CDs, CCDs or fixed premium contracts to support decarbonization technologies for which the carbon price might not be a sufficient incentive*”.¹⁰

According to the European Environment Agency, between 2013-2020, 75% of EU-ETS revenues were already used for climate and energy-related purposes across the EU-27, and 76% in 2021-2022. The Climate Law sets a requirement for Member States to use all auctioning revenues for climate and energy related purposes starting from mid-2023.

Therefore, IOGP Europe is convinced that the time is right for the EU to implement concrete policy measures stemming from the ICM strategy to meet the need for EU industrial competitiveness. We believe the EU ETS and its revenues, managed through the EU innovation Fund, provide the right framework in which to integrate the first step of a new market-based approach.

⁷ *The future of European competitiveness – Part A – ‘A competitiveness strategy for Europe’; and Part B – ‘In-depth analysis and recommendations’*, 9 September 2024.
⁸ Ref. *The future of European competitiveness – Part B*, pp. 108-110.
⁹ “A stronger focus is needed by both the EU and national governments to provide sufficient financial resources. The report recommends earmarking a larger share of ETS revenues to EITs, (...) for example by supporting the uptake of green hydrogen or carbon capture and storage solutions (...) Decarbonisation funding across the EU should be based on common, competitive and simple instruments, such as Carbon CfDs or competitive auctions by the European Hydrogen Bank. A basket of options should be in place to financially support transport decarbonisation”, *The Future of European Competitiveness, Part A*, p. 43.
¹⁰ See p. 38 of [EU ETS Directive 2023 revision](#).

2. The key role of Carbon Contracts for Difference (CCfDs)

In Europe today, the main financial trigger for a company to invest in capture technologies as part of the CCS value chain is only provided if it faces full exposure to the costs of the ETS, and the ETS price exceeds the total CCS value chain costs. However, today, not all industries that will need CCS to decarbonise are fully exposed to the effects of the ETS, and the ETS price is not yet high enough to enable companies to invest in CCS. The EU needs to bridge this gap until the ETS price increases in line with the next phase of the EU's decarbonisation – otherwise no incentives will be available for emitters to invest in capture technologies and, consequently, pay the cost for transport and storage.

As CCS remains, in its nascent phase, a capital-intensive technology, there is the need to bridge this gap until the ETS price increases in line with the next phase of the EU's decarbonisation.

IOGP Europe's analysis based on Rystad¹¹ data estimates the cost of the full CCS value chain in the EU at a level between 130-230 euro per tonne (€/tonne) of CO₂. The capture part typically accounts for more than half of the total (depending on the type of capture technology) and is estimated, for the vast majority of industries, at approximately 90 to 130 €/tonne of CO₂.

By covering the cost gap between a stable 'strike price' and the fluctuating ETS allowance prices, CCfDs offer a stable, predictable environment for investors, ensuring the economical viability of capture investments (and the related costs of contracting for transport and storage). Those contracts compensate – the entities emitting CO₂ and subject to ETS allowances – for the delta between the needed allowance level and the prevailing ETS allowance market price at a given point in time.

National schemes have already successfully been deployed (e.g. SDE++ in the Netherlands) or are currently being implemented (such as in France, Germany and Austria). By providing stability and predictability of future revenue streams, such contracts enable investments in new projects that would otherwise take many years to develop, or not come to market at all if they were solely dependent on volatile market prices. It must be noted that other supporting frameworks than CCfDs exist – e.g. stable tax credits, or dedicated funds – and that each one of them aims to provide emitters with long-term certainty on the value of the abated CO₂.

It is important to emphasize that European CCfDs should be designed in a way that avoids discriminatory situations and allow for integration with other financing instruments, at the Member State or European level. As the financing gap may vary significantly across different industrial sectors and their respective challenges, this approach can provide support to industries facing greater decarbonisation hurdles due to a larger financing gap. When used in conjunction with other value-chain instruments, as provided for in the EU ETS, CCfDs offer a promising path to a commercially robust future for CCS deployment.

3. A competitive auctioning scheme for CCfDs dedicated to CCS projects

In its ICM Strategy, the Commission put forward the suggestion of CCfD schemes at the European level to support CCS projects, envisaging the creation of a competitive mechanism under the Innovation Fund.¹²

IOGP Europe strongly supports the Commission's recommendation and, as announced at the last ICM Forum in Pau,¹³ encourages starting the development of a CCS Bank for Europe as soon as possible – building on the achievements of the first [pilot auction](#) for RFNBO H2 under the Hydrogen Bank.

This new instrument aims to reach similar objectives, with extended scopes:

- The creation of a **cost-effective and market-based instrument for financial support**. Competitive bidding, in economic theory, is touted as transparent and effective. A constrained budget is allocated to project developers that (can) operate with highest cost-efficiency, whilst achieving maximum greenhouse gas emissions reduction.
- **De-risk projects and maximizing leverage of private capital**. The large volumes of finance required, coupled with the underlying risk of the nascent carbon market, and often innovative long-term nature of large-scale industrial decarbonization projects, can make CCS projects unattractive to private investors without any financial support. A CCfD mechanism can improve a project's financial viability, lessen the risk involved, thereby unlocking additional private investment and easing Final Investment Decisions (FIDs).

¹¹ In IOGP Europe's paper on *Creating a sustainable business case for CCS value chains* (see footnote 6), pp. 9-13.

¹² ICM Strategy, p. 18.

¹³ See IOGP Europe intervention in the 5th panel of the 4th ICM Forum: "Net-Zero Strategic Projects of industrial carbon management – how and where?", available [here](#).

- **Price discovery and market formation.** The first Hydrogen Bank pilot auction attracted 132 bids for renewable hydrogen projects between November 2023 and February 2024. The aggregated data revealed unexpectedly lower levelized costs to produce renewable hydrogen and unparalleled insights into geographical variance and market and sectorial willingness-to-pay. Such insights are highly valuable in the absence of a liquid market, offering a way for both market participants and the institutions to glean insights. These insights would be invaluable in a similarly nascent CCS market.
- **Reduced administrative burden.** Auctions have a lower administrative burden for applicants than other grant processes. Less documentation is required, and the evaluation timeline is shorter. **Furthermore, the scheme should be technology-neutral, meaning it would be open to all ETS-related sectors without technology baskets or sectorial prioritization.**

To achieve these objectives, key qualification requirements should ensure the highest possible relevance and quality of the projects. Each project should provide (i) a clear strategy for its development, including installations' procurement, low-carbon electricity sourcing and permitting; and (ii) guarantees for the completion of the project (letter of intent).

Furthermore, the scheme should be technology-neutral, meaning it would be open to all ETS-related sectors without technology baskets or sectorial prioritization.

4. How the European CCS Bank mechanism would work

The European CCS Bank will be based on auctions where project developers submit bids for an ETS budget guarantee (the "auctioned good"): each bid specifies an "application amount", expressed in €/tonne of CO₂ captured, transported, and permanently stored over a (e.g.) 10-to 15-year period.

- 1) From the perspective of applicants, this "application amount" reflects both the ETS price at the time of the bidding and the unprofitable portion of their respective business case. This includes both capital expenditures (CapEx) and operational expenditures (OpEx) and represents the project's strike price, ensuring that bidders can decarbonize in a financially sustainable and cost-effective way.
- 2) Bids submitted during the auction will be ranked based on the application amount, in accordance with the "competitive bidding" principles set forth in the Innovation Fund framework ([Delegated Regulation 2023/2537](#)). The auction operates on a "pay-as-bid" basis, with a fixed ceiling price set for the application amount (€/tonne of CO₂ stored). **Projects requiring the least financial support would qualify first** (see Figure 3).

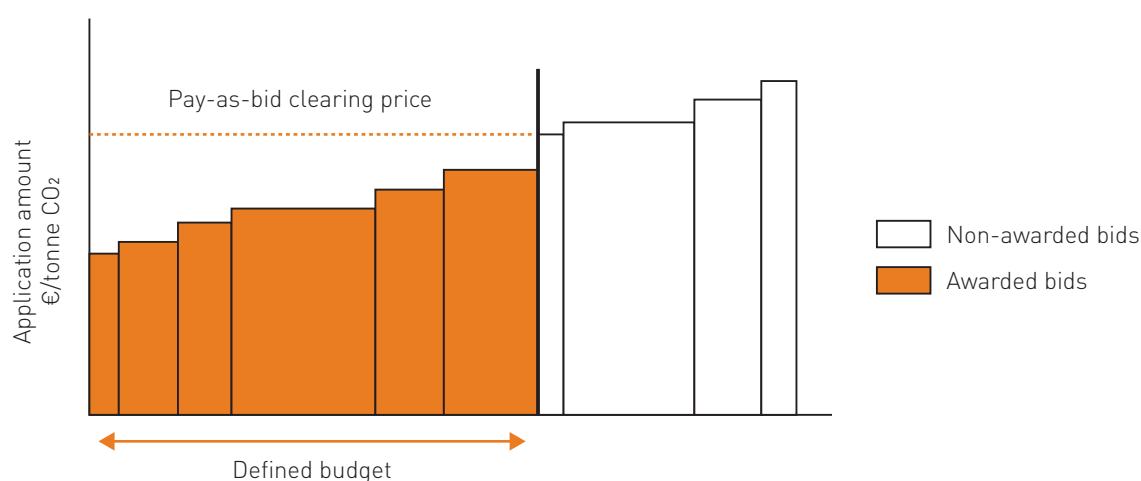


Figure 3 - Example of auction under the proposed mechanism

- 3) The awarded support will be based on performance, with payments only issued for verified and certified volumes of CO₂ captured and stored. **The payments will be calculated on an annual basis, on the average difference between the bid and the actual ETS price realized that year** (Figure 4).

4) The Article 8a of the revised EU ETS¹⁴ provides the framework for the development of a competitive bidding mechanism and begins to address the potential financial risk for the Innovation Fund, particularly in the event of a low EU ETS price. Anyway, **further innovative work is needed to manage the potential risk associated with the Innovation Fund exposure**. One of the options being considered concerns setting a floor price: if the EU ETS drops below this floor, the intention is to not compensate projects for the discrepancy between the floor price trajectory and the actual EU ETS amount. **While the concept of a floor price is understandable in terms of budget risk management, it might not provide the certainty that emitters require to take a Final Investment Decision (FID)**. Therefore, additional funding and de-risking sources should be explored, such as dedicated funds or national schemes, to supplement the Innovation Fund.

To ensure timely progress in establishing the value chain, awarded projects must reach the "entry into operation" (EiO) phase within a reasonable timeframe¹⁵ after signing the grant agreement. In case of failure to meet this milestone, the completion bond deposited by the project developer will be called.

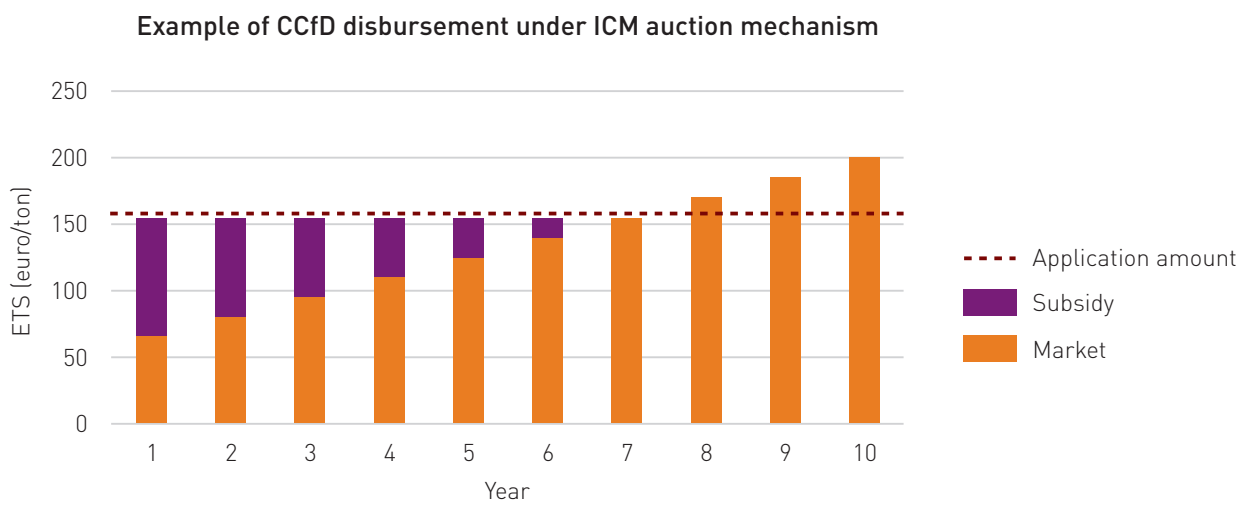


Figure 4 - CCfD/ETS delta, example of the evolution of payments disbursement

Finally, the instrument should allow for the cumulation with other public financing sources, which should be subtracted from the application amount, as a measure for ensuring a level playing field and guaranteeing fair competition among the bidders.

The mechanism should follow the principle outlined by the European Commission in the European Hydrogen Bank Communication¹⁶ of "Auctions-as-a-service" for Member States. Running a single auction at the EU level would guarantee the allocation of funds to the most competitive projects first from the Innovation Fund budget, and then from Member States' ones. This open approach would allow willing Member States to actively participate in the implementation of additional projects, while reducing the overall administrative burden.

By combining action at Member State and Commission level – and setting a stable path for CCfD auctions – the EU will provide a timely framework for the development of the CO₂ value chain, enabling industry to decarbonise in a cost-effective way, promoting competitiveness by avoiding deindustrialisation, maintaining Europe's global cleantech leadership and contributing to meeting climate goals.

¹⁴ See footnote 10.

¹⁵ Optimal timing should be based on a thorough assessment of existing case studies. As an example, the SDEE+ scheme in the Netherlands suggests that a minimum of six years may be necessary. Some countries have introduced a "force majeure" clause to have the maximum duration expanded in case of delays due to external factors outside the applicant's control.

¹⁶ Commission Communication on the European Hydrogen Bank COM(2023) 156.

5. Call for action

IOGP Europe calls the Commission to urgently start a discussion with relevant industry stakeholders – as mandated in the mission letter addressed to Vice-President Séjourné¹⁷ – on a pilot competitive auction scheme for CCS-related CCfDs, under the next call of the Innovation Fund, in view to establish the proposed European CCS Bank. Concretely, in alignment with the text of the Innovation Fund Delegated Act,¹⁸ we strongly encourage the Commission to:

- 1) Consult stakeholders and Member States in the Innovation Fund Expert Group (IFEG) on a potential CCfDs auctioning scheme (*European CCS Bank*);
- 2) Conduct a public consultation on the auction terms and conditions;
- 3) Prepare for the publication of the call for proposals.

IOGP Europe looks forward to collaborating on the establishment of the European CCS Bank and is committed in making it a success. By working closely with relevant stakeholders across value chain and focusing on effective implementation, this initiative, along with other measures along the full value chain, will drive forward CCS commercial deployment and achieve EU decarbonization goals.

¹⁷ Cit. Mission Letter to the Executive Vice-President-designate for Prosperity and Industrial Strategy, Stephane Séjourné: "You should (...) work in partnership with all stakeholders to ensure targeted solutions for each value chain". Brussels, 17 September 2024.

¹⁸ As amended on 15 September 2023 by the [Commission Delegated Regulation \(EU\) 2023/2537](#).



International
Association
of Oil & Gas
Producers

CCS deployment is
too slow in Europe.

This puts the EU's
competitiveness
and industrial
decarbonization at risk.

Could a CCS Bank
be the game changer
Europe needs?

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