

Carbon Contracts for Difference (CCfDs)

Case study for:
Demand-Side Subsidies & Tax Credits

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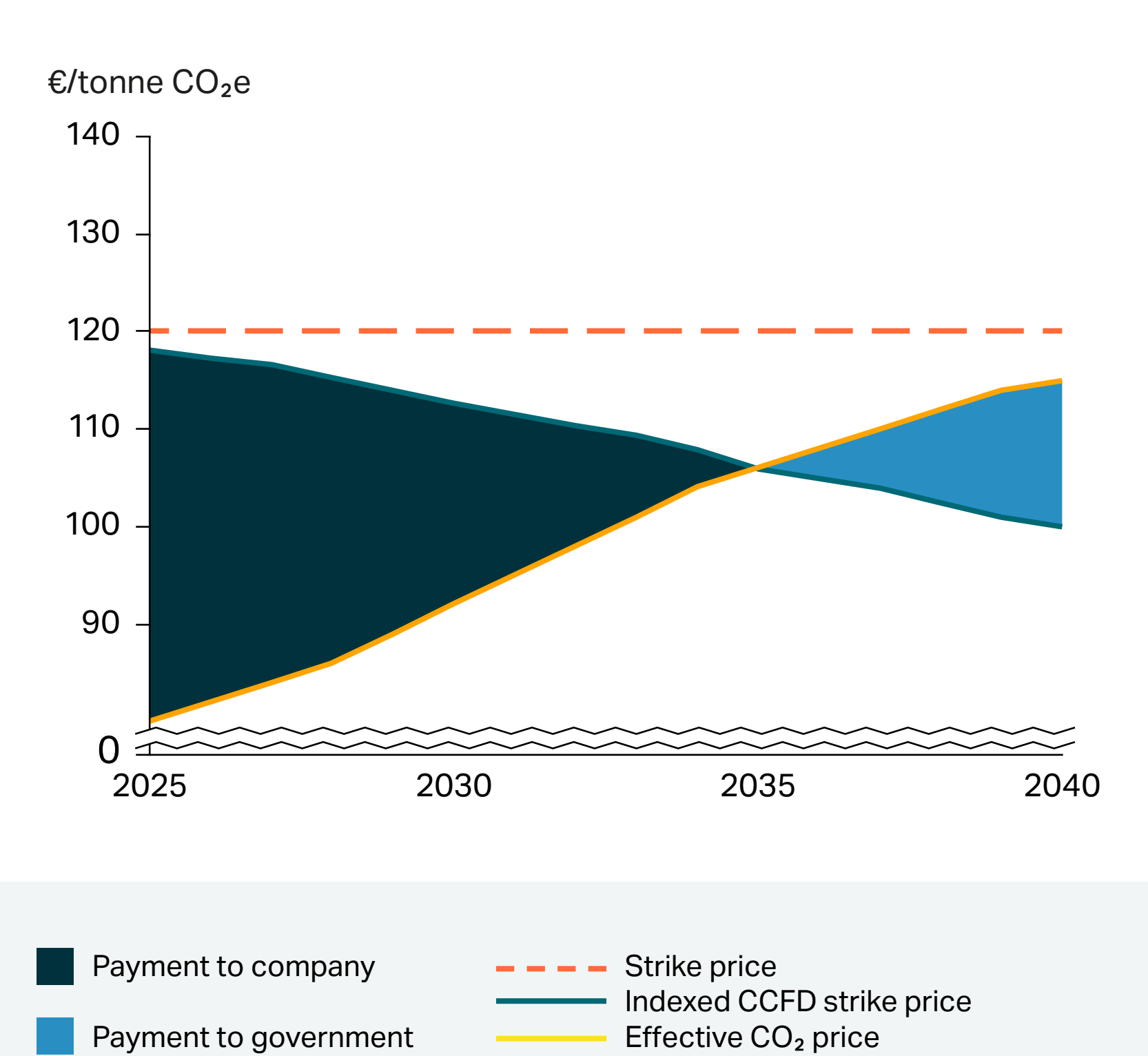
Case Study: Carbon Contracts for Difference (CCFDs) (1/2)



Applies to: heavy industry

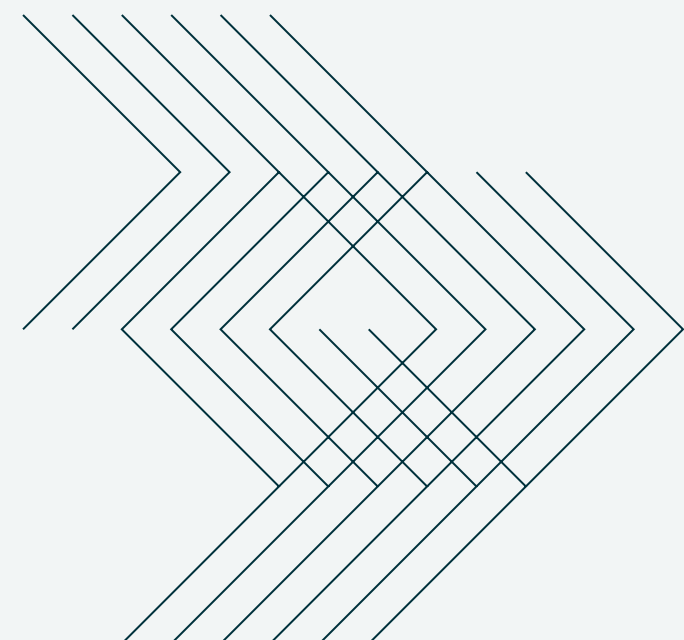
- Germany has launched a €4bn auction for [CCFDs](#) as the first step of a programme expected to ultimately be much larger. This supports the use of low carbon inputs such as green hydrogen. CCFDs work through three steps:
 - Bidding:** companies assess the cost and CO₂ emission delta between incumbent fossil and green plants. They use this to calculate a Euro per-tonne CO₂ **strike price** that would bridge the green premium, within given parameters (EU-ETS carbon price, energy price, caps on bids).
 - Adjustments:** where bids are successful, the base price is adjusted annually according to energy and carbon prices to calculate an **indexed CCFD strike price**. The **effective carbon price** is then subtracted from the **indexed CCFD price**.
 - Payments:** if the **effective carbon price** is **lower** than the **indexed CCFD strike price**, the difference is paid to the company from the government. If the **carbon price** is **higher** than the **indexed CCFD price**, the difference is paid to the government from the operator.
- This guarantees an effective carbon price that would give parity with an equivalent fossil good.
- Sectors in scope** include: oil refining; steel works; the production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp/paper, cardboard and acids and bulk organic chemicals. Projects would need to achieve at least a 90% emission reduction by the end of the funding period.
- Duration:** the contracts would last for up to 15 years, covering additional capex and opex.
- Competitive process:** companies will be selected competitively based on achieving the lowest cost emission reductions. The data from such bids may be able to be used to support price discovery in new markets - although this is not explicitly specified for the first auction.
- Other regions are now considering adopting CCFDs (e.g. Canada)

CCFD payment calculation: illustrative example



Case Study: Carbon Contracts for Difference (2/2)

Key challenges/risks



1 Need for large scale, prolonged funding

- A significant and steady amount of funding is needed; in Germany, the programme is envisaged to require tens of billions of Euros in funding. Initially, funds for the CCFD scheme were intended to be covered by leftover COVID-19 recovery funds that would be used to finance climate initiatives. A German court barred this route, which has raised issues with funding.
- Options to reduce the overall cost could include higher carbon prices and complementary regulations that increase willingness to pay for low carbon products.

2 Uncertain pricing information

- Due to a lack of accurate pricing information, it may be difficult to ascertain accurate base and indexed prices for the bidding. This could either lead to conservative bids being entered, or to increased uncertainty and bankability for projects down the line.

3 Competition across sectors

- Because the CCFDs are allocated across several industries, some are likely to have lower abatement costs than others - and therefore be more competitive in auctions for CCFDs. To ensure breakthrough technologies are incentivised in a wide range of sectors, separate buckets may be needed for different sectors.

4 Accessibility for small companies/facilities

- Larger facilities may be more competitive than smaller facilities in bids owing to economies of scale. To mitigate this, very large facilities (e.g. requiring €1bn+ in funding) are not included in the first pilot. Separate funding instruments may be needed for very small plants.