Unlocking transition to climate-friendly material sector in Europe with Carbon Contracts for Difference and Climate Contribution
This policy brief presents an overview of the key takeaways from the CFM TRACTION project, which focused on refining the concepts and exploring socio-economic impacts of two policy instruments supporting industrial decarbonisation: Project-based Carbon Contracts for Difference (CCfDs) and the Climate Contribution in Germany and Poland. For a more detailed review of the results, please see the CFM TRACTION synthesis report *Contracts for Difference and Climate Contribution: a comparison between Germany and Poland*.

### About CFM TRACTION

Working with stakeholders in Poland and Germany, the Climate Friendly Materials – Market Creation through Policy Innovation (CFM TRACTION) project has co-created new insights into the policy toolkit to support systemic transformation of the EU basic materials sector to net zero by 2050.

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Carbon Contracts for Difference (CCfDs) are a project-based financial instrument through which the government would guarantee companies developing an innovative low-carbon projects a fixed carbon price level for emissions reductions below a benchmark baseline over a specified period. When the realised carbon price is below the agreed upon CCfD reference price level, the government pays the company a premium on the carbon price for emissions reductions. On the other hand, when the carbon price exceeds the CCfD reference price level the company pays the difference back to the government.

The results of the analysis conducted within the project highlight two important advantages of CCfDs. First, **CCfDs lead to investment in clean technology at lower expected carbon prices than for commonly discussed minimum CO\(_2\) price levels**, facilitating industrial transformation at a lower cost for the economy and consumers (Figure 1). The reason is that the CCfD removes the risk associated with carbon price uncertainty, thereby reducing the level of price needed for investment profitability.

**FIGURE 1**
Comparison of CCfD and CO\(_2\) minimum price – German steel sector example

Source: Richstein et al. (2021)
Second, the contracts can also significantly reduce the scale of government funding required for industrial transformation, as well as lead to positive cash flows for the government over time, when carbon prices rise.

Depending on carbon price development and technology costs, the Net Present Value (NPV) can become neutral or even positive for governments. The introduction of CCfDs would substantially decrease the required scale of funding in both countries (Figure 2). Even in the case of low future carbon prices, the payment is estimated to be EUR 13 bn in Germany and EUR 10 bn in Poland. In the scenario with higher carbon prices, the German government would gain an estimated revenue of EUR 17 bn, while net costs for the Polish government decrease to EUR 0.35 bn. Therefore, thanks to the hedging nature of CCfDs, a combination of CO₂ price and CCfDs can substantially reduce the costs of supporting the transition of basic materials by the governments.

**FIGURE 2**
Net present value \((r = 0.8\%)\) of government funding by CO₂ price scenario for the medium cost scenario to decarbonise 30% of the production of selected materials in Germany and Poland by 2035.

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**Source:** Richstein et al. (2021) for Germany. WiseEuropa based on Richstein et al. (2021) for Poland.

The climate contribution is a weight-based charge on basic materials like steel, cement, aluminium or plastic at the level of EU ETS benchmarks for the specific materials. These benchmarks will continue to be used for granting free allowance allocation and power price compensation to basic material producers as carbon leakage protection. The climate contribution is also levied on imported materials – including as part of products – but is not charged where the materials or products comprising these materials are exported.

The liability is passed along the value chain and paid upon final consumption or at the point where a given intermediate producer decides to pay the contribution, because the products are not exported to third countries which would allow for waving the liability. The climate contribution applies to the products regardless of whether they are produced within the EU ETS system or outside of it.

There are several significant advantages of complementing free allocation within the EU ETS with a climate contribution:

- **Consistent carbon price** is ensured, benefiting all mitigation options (clean production processes, efficient material choice and recycling) both on supply and demand side, and ensuring that the value of free allowances currently granted for free to the industry is captured and can be used to fund climate action and post-COVID recovery.

- **Credible carbon leakage protection**: climate contribution addresses the main concerns associated with maintaining free allocation:
  - It reinstates a consistent carbon price signal weakened by the free allocation, addressing climate protection concerns.
  - It captures the full value of the allowances granted for free, addressing revenue concerns.
  - It provides revenue to either purchase allowances under EU ETS to be granted for free to clean production processes or to directly fund their incremental costs, addressing the concerns related to perceived lack of compatibility between declining EU ETS cap and free allocation.
- **Legal and administrative feasibility**: The climate contribution can be built on the legal and administrative experience from excise charges, and as such be levied on imports and not on exports, while being fully aligned with WTO principles.

The results of the analysis show that climate contribution can **generate around EUR 17-21 bn of revenues in Europe annually** (see Figure 3 for the distribution across industries) that can be used for funding climate action, including covering CCfDs costs.

**FIGURE 3**
Revenues generated by the climate contribution mechanism at the EU level (EUR bn, CO₂ price = 30 EUR/t)

In both Germany and Poland, **the projected impact of carbon pricing on consumption is not only small (less than 0.5% of household expenditure) but also progressive**, as the structure of consumption is more material-intensive for higher-income households (Figure 4).

The actual effect may be even lower, as this estimate does not reflect response in terms of enhanced material efficiency or substitution. The analysis suggests that the relative impact of consistent carbon pricing in basic materials on final expenditures will be somewhat stronger in Poland than in Germany which could reflect lower prices for products due to lower retail mark-ups related to branding or labour costs.
Climate contribution impact on consumption expenditures per income quantile in Poland and Germany (CO₂ price = 30 EUR/t)

For Poland, these estimates are corrected by the differences in price level and consumption expenditure composition between Germany and Poland.
Unlocking full investment potential of innovative low-carbon solutions for production and use of materials requires clarity, favourable market conditions and regulatory framework as elements necessary to secure predictability in the transition from the current state to the fully decarbonised sector. This is important both from a climate and an industrial policy perspective as it would resolve the current investment limbo. Currently, investments in conventional projects are deemed non-viable, given the prospect of mid- and long-term decarbonisation targets, while, in absence of regulatory clarity, investments in innovative low-carbon technologies and business models are too risky. To ensure a robust framework for achieving climate targets, the EU policy should provide incentives to decarbonise:

- across materials – to avoid artificial and inefficient resource substitution between different materials, and to ensure that Europe develops a broad set of decarbonisation options for all material markets,
- across mitigation options – to enable the most efficient and effective combination of supply- and demand-side measures, in particular utilising the potential of Circular Economy to deliver emission cuts, improve the resilience of supply chains and decrease the total scale of adjustments required on the supply side,
- across European countries and regions – to make sure that the climate policy does not lead to new divisions between North and South, West and East, and to enable just transition in carbon-intensive local economies.

While the assessment of CCfDs and climate contribution indicates that they can provide crucial incentives to decarbonise the European material sector and overcome the investment limbo, their timely and equitable implementation across Europe requires enabling framework for countries and regions which are catching up in terms of industrial transition.
Therefore, they should be considered as a part of the broader policy framework, including dedicated innovation funding, green public procurement and gradual introduction of product standards. Further options to ensure inclusive transition across Europe include:

- providing access to low-cost financing options, e.g. through European Investment Bank or Recovery and Resilience Facility,
- ensuring balanced geographical coverage of the crucial infrastructure enabling decarbonisation (electricity, low-carbon gas networks, etc.),
- ensuring that regulatory framework (e.g. state aid rules) provide flexibility regarding technology choices, allowing countries to fully utilise their potential to deliver decarbonised materials,
- supporting joint research and innovation initiatives in the area of industrial decarbonisation and circular economy,
- providing long-term policy roadmap for the EU to achieve climate-neutral materials sector.
References


