

# Reforming Carbon Border Adjustment Mechanisms: European industry perspectives on a path forward

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## Summary

- The EU and the UK have recently developed Carbon Border Adjustment Mechanisms (CBAM) to account for the carbon cost embedded in imported products.
- There are three major drawbacks to the current design of the CBAM targeting process-specific emissions. Circumvention risks, a lack of export coverage and a scope limited to upstream producers create risks of leakage of emissions and industrial production.
- DIW Berlin, CETEX and their research partners conducted a series of interviews on CBAM reform options with 27 industry stakeholders from multiple countries in the EU and the UK, across the following sectors: cement, steel, aluminium, organic chemicals and manufacturing industries.
- Most of the interviewed industry stakeholders do not regard the extension of free allocation of emission allowances as a viable long-term option, as this would severely jeopardise the carbon price signal and the transition to climate neutrality.
- The creation of lead markets is generally viewed as a positive way to complement carbon pricing to foster green demand. However, on their own, they are considered insufficient for financing decarbonisation.
- A CBAM based on standardised values is generally viewed positively by several stakeholders in sectors with complex value chains: steel, aluminium and organic chemicals. An evolution of the CBAM towards a similar model to excise duties draws interest from these stakeholders as a way to extend the scope of downstream products covered.
- When the interviews were held in late 2025, the interviewees had limited knowledge of this reform option and, accordingly, were cautious in its evaluation. They acknowledged the benefits of effective carbon leakage protection and clean investment incentives, while recognising that such an evolution would reduce the direct incentives for third-country decarbonisation that the current EU CBAM design provides.

**Policy briefs** provide analysis on topical issues, presenting specific recommendations to inform ongoing policy debates. Drawing on CETEX's expertise, they either summarise our research findings or the state of knowledge about a particular issue.

## Introduction

To implement carbon pricing and drive the transition to a climate-neutral economy, the EU introduced its EU Emissions Trading System (ETS) in 2005. However, uneven development of carbon pricing across jurisdictions puts industries at risk of carbon leakage, whereby production is relocated to countries with weaker climate policies (Sato et al., 2015). Two policy options have been implemented to address leakage risk: the allocation of free carbon allowances and, more recently, the Carbon Border Adjustment Mechanism (CBAM) (Meadows et al., 2024). The shortcomings of the current CBAM design based on process-specific emissions have already become apparent and, therefore, options for reform are being examined.

This brief summarises findings from a series of interviews on CBAM reform options with 27 industry stakeholders across the EU and the UK (see Box 1). The interviews were conducted by academics from institutions across Europe who have analysed these issues in recent years.

We briefly describe the context for the CBAM's introduction, before turning to interview analysis on potential reform options across different sectors.



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### Box 1. Research method

Between October 2025 and March 2026, we conducted 27 semi-structured interviews with industry stakeholders in various European countries, including Germany, France, the UK, Spain, Hungary and Sweden. The interviewees represented firms and business associations in the cement, aluminium, steel and organic chemicals sectors, as well as in manufacturing industries that use basic materials (e.g. electronics, machinery).

The interviewees were selected to provide diverse perspectives from firms that differed in size, geography, ownership and decarbonisation strategy. Yet, given that the sample was influenced by participation, we do not claim that their views are representative of sectors as a whole or of the wider industry.

Interviewees were asked to evaluate three policy scenarios:

1. The gradual phase-out of free allocation and phase-in of the CBAM (current policy).
2. The extension of free allocation and the delay of the CBAM.
3. The development of green lead markets as the major decarbonisation instrument.

We also discussed a fourth scenario in which CBAM was reformed based on standardised values, as detailed in the EU Commission's 2021 assessment of CBAM options (European Commission 2021). However, as interviewees generally had limited knowledge of this reform, we did not evaluate it on equal footing with the other scenarios.

Firm preferences for each scenario were measured with two standardised questions on perceived reform efficiency regarding carbon leakage protection and a clean investment framework. As part of the semi-structured approach, interviewees could freely elaborate on the reasons for their choices.

The interviews were performed through one-hour video calls, which were recorded and transcribed, or summarised, and sent to interviewees upon request. Data were analysed by coding the transcript or the summary and grouping common viewpoints into themes. Because most participants expressed fuzzy preferences, responses are organised in the graphical summaries below using more flexible categories than initially proposed.

## Context

### Milestones for European climate policy in 2026–27

As part of the European Green Deal, a CBAM targeting process-specific emissions came into effect in January 2026. Free allocation of emission allowances is currently reserved for specific sectors under the EU ETS, to address carbon leakage risk. This will be gradually replaced by allowances auctioning as the CBAM is phased in. In its current design, the CBAM assesses the actual carbon emissions embedded in imported products during the production process. While the mechanism was intended to strengthen the ETS and address the limitations of free allocation, it has come under heavy criticism (Neuhoff et al., 2026). A particularly contentious issue is the CBAM's extensive reporting requirements, whose administrative complexity places a significant burden on businesses and impedes downstream extension across the full value chain. The resulting limitation of scope to upstream products undermines the effectiveness of the CBAM as a leakage measure.

The current design of the CBAM does not adequately mitigate carbon leakage risk for EU exporters, as concerns over World Trade Organisation (WTO) compliance have precluded the introduction of export rebates. This has prevented the creation of a level playing field for export-oriented industries.

The current CBAM design also creates incentives for resource shuffling, whereby firms divert production from existing cleaner processes to CBAM-regulated markets and continue to sell output from the carbon-intensive processes to unregulated markets. This alters trade flows and sometimes replaces domestic production with imports – without reducing global CO<sub>2</sub> emissions. The EU's December 2025 proposal on the CBAM emphasises the use of voluntary default values. This would reduce administrative complexity but would not eliminate resource-shuffling risks, as importers could still use production-specific values.

The 2026 EU ETS market reform is expected to revisit several design features linked to the CBAM's current shortcomings, while the UK will introduce its own CBAM on 1 January 2027. In both jurisdictions, there is an ongoing discussion about important implementation choices, notably on the use of default values and the pace and design of free allocation reform.

### What industrial and climate policy instruments are suitable for the European context?

As Europe's climate agenda reaches key milestones in 2026–27, its decarbonisation ambitions are increasingly shaped by a more fragmented economic and geopolitical environment. Europe's dependence on gas imports, and the persistently high energy prices associated with them, continue to weigh on the competitiveness of European firms. For climate policy to advance in the EU and in the UK, it needs to be aligned with broader industrial priorities. Criticism of the CBAM is intensifying, and support is growing for extending free allocation. While this could alleviate short-term cost pressures, it would weaken decarbonisation incentives and risk undermining investment and longer-term competitiveness. Therefore, it is vital to

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“The current design of the CBAM does not adequately mitigate carbon leakage risk for EU exporters.”



Photo: Chris LeBoutillier, Unsplash

jointly consider reforms of the EU ETS and the CBAM. If done well, this could preserve effective carbon price incentives, support industrial modernisation and strengthen value chain resilience without undermining competitiveness.

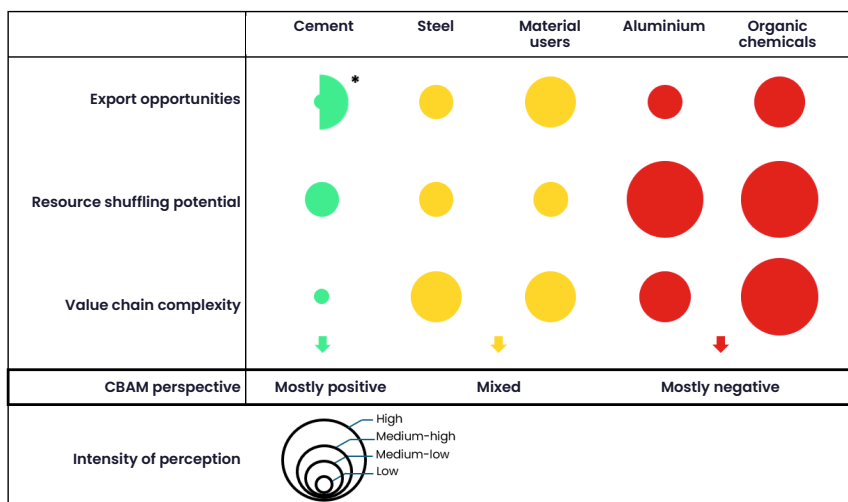
Lead markets designed to create demand for green materials are receiving growing attention in European climate policy. While such an approach could take the form of product labelling and the voluntary choices of private consumers, this would likely be insufficient in scale and predictability (Köveker et al., 2023). Lead markets can also take the form of mandatory mechanisms, such as public procurement rules that favour carbon-neutral materials, requirements for the emissions intensity of materials available on the market, and minimum quotas of climate-neutral materials embedded in products. While lead markets are potentially helpful for coordinating the transition to climate-neutral materials, concerns remain about their ability to independently provide an adequate framework for investment in climate-neutral material production.

## Industry perspectives on CBAM phase-in and free allocation phase-out (current policy)

Support for the existing CBAM design and scheduled phase-in varies markedly across sectors. As shown in Figure 1, the interview series reveals that views on the design are shaped primarily by concerns in three areas: export opportunities, the complexity of the value chain, and the potential for circumvention and resource shuffling. These three sectoral characteristics drive the potential costs and risks of the reform for the industry and shape positions on the CBAM. Each characteristic was assessed based on interview insights and rated on a relative four-level scale: Low, Medium-low, Medium-high, High. This relative scaling allows for comparisons both within and across sectors.

“Support for the existing CBAM design and scheduled phase-in varies markedly across sectors.”

**Figure 1. Stakeholders’ perceptions of different aspects of the CBAM**



Note: \* indicates that interviewees in the same industry had distinct perspectives.

## Cement: a positive perception of the CBAM

In the cement industry, where value chains are relatively short and firms in most countries have limited export opportunities, most interviewees view the current CBAM design as an improvement and as an essential tool to reduce the carbon leakage risks that undermine international competitiveness. At the same time, stakeholders highlight the risks of circumvention and resource shuffling, pointing to the need for robust verification processes to implement CBAM effectively. Firms from southern European countries such as Spain, Italy and Greece consider it essential to complement the current CBAM with an export solution. This is because cement producers in these Member States have greater export opportunities.

The current CBAM design is also generally viewed as supportive of clean investments. However, interviewees stress the importance of a clear and predictable policy framework that is aligned with the sector's technical constraints. In particular, the timely development of carbon capture and storage (CCS) infrastructure was seen as pivotal for cement decarbonisation.

## Steel and material users: divergent views on CBAM implementation

In the steel sector and downstream industries, most interviewees agree on the main strengths and weaknesses of the CBAM. They argue that the mechanism levels the playing field and strengthens the business case for low-carbon materials. However, it does not adequately address exports, resource shuffling or downstream products – and could only do so with significant administrative costs. Material users place a particular emphasis on this administrative complexity. Nevertheless, interviewees within the same sector have differing assessments of the CBAM.

Some within the steel sector and downstream industries support the current CBAM design and remain optimistic about future improvements. From this perspective, the existing policy ambition and implementation timetable should be maintained, since any weakening of the phase-in would send damaging signals to investors and producers. Stronger default values to simplify administration, the inclusion of indirect emissions, and a stricter verification process are seen as potentially sufficient to ensure that the mechanism is effective. If such measures were paired with a solution for exports, the CBAM would not require a fundamental redesign.

Other interviewees in the steel sector were more sceptical. In their view, the CBAM remains an untested instrument that could expose the sector to substantial carbon leakage risk if it is introduced too quickly. They argue that implementation should, therefore, be gradual and closely monitored, and that free allocation should only be phased out once the mechanism demonstrates that it provides effective protection. The increasing attention and concern from the steel sector stems from the CBAM's implications for material users.

In downstream industries, some interviewees argue that the current reform risks shifting carbon leakage further down the value chain, while placing a significant administrative burden on downstream



Photo: Sergej Karpow, Unsplash.

producers. Many of these producers are small and medium-sized enterprises (SMEs) that have only a limited capacity to manage additional reporting requirements. More broadly, these interviewees see the current design of the CBAM as creating significant risks for European industry, as it weakens export competitiveness and does not address the production cost gap. A more far-reaching reform is needed to address exports, broaden CBAM coverage and simplify administration beyond the limited use of default values.

### **Aluminium: the “scrap loophole” should be closed**

Most interviewees from the aluminium industry agree on the need to introduce carbon pricing and establish a genuinely level playing field. However, they generally regarded the current CBAM design as insufficient to prevent carbon leakage or foster clean investments.

Interviewees note that the absence of an export solution and the incomplete coverage of the value chain would continue to expose the sector to carbon leakage risks. However, their main concern is the so-called “scrap loophole”. Because interviewees highlight that it is impossible to distinguish between primary and secondary aluminium in practice, they anticipate that treating secondary aluminium as a zero-emission material will encourage large-scale imports of secondary aluminium that outcompete European primary and secondary aluminium production. While such an approach would reduce emissions in the EU, this could be offset by more carbon-intensive production in third countries, resulting in an overall increase in global emissions. Several interviewees argue that a CBAM based strictly on process-specific emissions is not workable for aluminium. A more pragmatic alternative, in their view, would be to assign the same emissions value to primary and secondary aluminium. These interviewees are generally concerned about scrap-metal exports, and some interviewees proposed limits on them. In this context, most interviewees support a gradual introduction of the CBAM, but stress that the current design needs to be improved. Until the mechanism can be shown to provide effective protection, free allocation should remain in place.

### **Organic chemicals: value chain complexity makes CBAM implementation impossible**

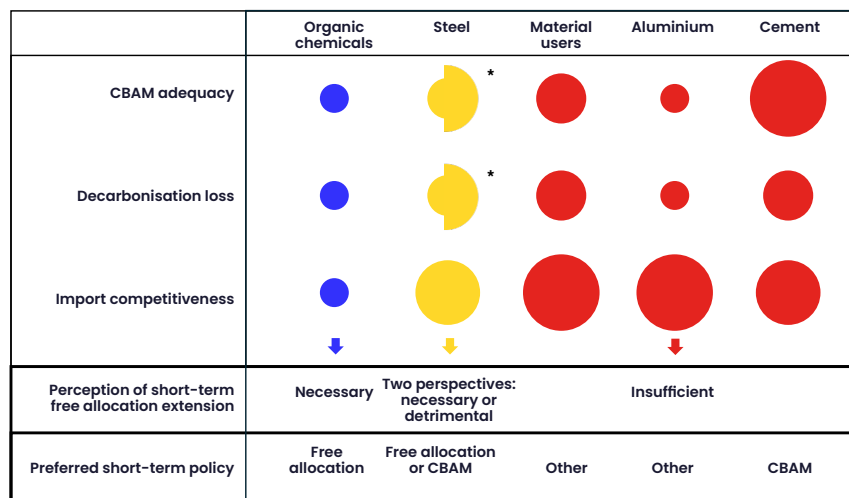
Interviewees in the organic chemicals industry consider the current CBAM design to be poorly suited to the sector’s value chain. Their concerns focus on its administrative requirements, which they regard as disproportionate given the complexity of the sector’s production chains and the large number of SMEs involved.

In their view, the current design leaves the sector highly exposed to resource shuffling by trade partners, while downstream products remain insufficiently protected and vulnerable to carbon leakage. They see the lack of export coverage as another major weakness because, in multiple EU countries, a large share of organic chemicals production is exported. Some suggest that one solution could be a standardised tax levied per quantity of chemical directly at the point of consumption.



Photo: Markus Spiske, Unsplash.

**Figure 2. Stakeholders’ perceptions of the extension of free allocation in the short term**



Note: \* indicates that interviewees in the same industry had distinct perspectives.

## Industry perspectives on delaying CBAM and extending free allocation

Most interviewees regard the extension of free allocations as insufficient to address long-term industry concerns. However, they have differing views of the value of these measures in the short term. As Figure 2 shows, interviewees’ perceptions of whether to extend free allocations in the short term align with their views on the CBAM’s adequacy, the loss of decarbonisation incentives and the intensity of import competition.

Across different sectors, there is a wide range of perspectives on a scenario delaying the introduction of the CBAM and extending free allocation:

- **Organic chemicals:** free allocations are a necessary short-term bridge but not a long-term solution, as they fail to support transformative investments.
- **Steel:** some interviewees in the industry see free allocation as necessary in the short term. Others, particularly those from newer firms that invested in green steel plants, view the extension of free allocation as a harmful signal that would delay industry and value chain decarbonisation while threatening access to funding opportunities.
- **Material users and aluminium:** free allocation can provide short-term relief but is mostly insufficient. It would delay the implementation of decarbonisation strategies and would provide inadequate protection against carbon leakage.
- **Cement:** the extension of free allocation would delay the development of new technologies and infrastructure that are essential to the transition to climate neutrality, such as CCS. Unlike CBAM, it would also fail to create a level playing field for firms competing with exporters based in places such as Turkey and North Africa, whose products tend to have higher carbon content but are cheaper.

“Most interviewees regard the extension of free allocations as insufficient to address long-term industry concerns.”

## Industry perspectives on green lead markets as the main decarbonisation instrument

Across all sectors, most interviewees support green lead markets as a complementary instrument rather than a substitute for the EU ETS. However, they believe that such markets do not address the core shortcomings of the current CBAM design:

- **Resource shuffling.** Green lead markets do not negate the risks of resource shuffling, as foreign firms can still redirect high-carbon materials to unregulated markets.
- **Export competitiveness.** As financing instruments, green lead markets would increase carbon leakage risk. European exporters may face stricter environmental requirements than their foreign rivals, negatively impacting their competitiveness in export markets.
- **Value chain coverage.** As financing instruments, green lead markets would shift compliance costs to downstream firms, creating unequal cost-sharing across value chains. Industry standards and public procurement rules are largely defined and enforced at the product level. This creates operational challenges for manufacturing industries that rely on differentiated supply chains for low-carbon inputs.

Green lead markets also present specific challenges that can undermine investments and industry competitiveness:

- **Import competitiveness.** Green lead markets do not level the playing field with imports, as they fail to address the dumping issues that are prevalent across the surveyed industries.
- **Scale.** Narrow applicability, constrained public finances and consumers' limited willingness to pay the green premium hinder lead markets' size and investment potential.
- **Speed.** A lack of coordination between demand for green products and domestic supply creates inflationary pressures and risks market capture by foreign producers.
- **Standard definitions.** The process of defining 'low-carbon' products is complex. Without clear standards, the industry cannot proceed with investments.
- **Uncertainty.** Uncertainty about regulation and demand hinders investment. Currently, lead markets are not expected to provide the predictability needed to foster investments.

## Differing needs but a shared lack of long-term solutions

### Value chains require differentiated approaches

This series of interviews shows that aligning carbon leakage protection with a clean investment framework may well require differentiated solutions between materials with simple and complex

### Box 2. Workshop findings

On 21 April 2026, the Climate Friendly Materials Platform and Friedrich-Ebert-Stiftung hosted a workshop in Brussels titled "Making CBAM work for complex value chains: Reform proposals around standardised emission values". Thirty-six participants joined, including EU-level policymakers and representatives of industry, academia, think-tanks and unions. The proposal for a CBAM based on standardised values was presented, and possible CBAM review reforms were discussed, including feasibility and practical implications, particularly in a standardised-values approach.

**In line with our interview findings, some industry stakeholders were open to the proposal of a CBAM based on standardised values and discussed its practical implementation.**

The steel and chemicals sector representatives emphasised the need to address carbon leakage risks along the entire value chain, which is exposed in the current design of the CBAM. Participants from the steel and aluminium sectors emphasised their concerns about resource shuffling, particularly in relation to scrap metal. Users of materials and actors in the chemicals sector described the prohibitive administrative burden of a production-specific CBAM. The proposal based on standardised values addresses these difficulties to some extent. However, it was revealed that many details of the practical implementation of the carbon liability had not been widely understood prior

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value chains. The current design of the CBAM targeting process-specific emissions appears to be suitable for the cement sector, with its relatively simple value chain. However, interviewees in the aluminium and organic chemicals sectors unanimously reject such a design due to their concerns about the treatment of scrap metal, the prohibitive administrative burden for SMEs, and circumvention risks.

In interviews conducted mainly in late 2025, steel producers and users expressed mixed perspectives. Additionally, most downstream actors raise concerns specific to their firm's size, capabilities and activities. They are highly critical of the uneven protection that the CBAM provides to actors along the value chain, and of the large set of products not covered by the mechanism.

Overall, these responses show that a differentiated approach to the implementation of the CBAM is necessary to address carbon leakage and foster clean investments in the basic materials industries.

### **A shared diagnosis but a lack of consensus on long-term solutions**

Although the interviewees expressed diverse views, there was agreement on some issues across all sectors.

Representatives of most firms reflect on the importance of regulatory clarity and alignment with technical capabilities. In particular, they consistently identify enablers such as access to competitively priced clean electricity, hydrogen and CCS infrastructure as the primary enablers of decarbonisation across all sectors. As many interviewees emphasise, coordination using transition plans could play a pivotal role in this regard. Such plans could coordinate supply and demand growth for climate-neutral goods. They could also enable the cross-sectoral organisations needed to develop the infrastructures required for the energy transition.

While many interviewees are concerned about the shortcomings of the CBAM (see Box 2), they also consider it impossible to achieve a clean transition if free allocation is merely extended or the ETS merely replaced by green lead markets. Furthermore, representatives of most firms underscore the need to address export issues. While respondents broadly agree in their diagnosis of the problem, there is no consensus between them on a common framework for carbon leakage protection or clean investments.

## **A CBAM based on standardised values**

Since the design of the EU CBAM in 2021, the rise in geopolitical tensions and fragmentation has increased the importance of adequately addressing carbon price differences. The mechanism should cover imports, exports and the full supply chain, and should avoid creating incentives for resource shuffling.

Border adjustments for excise charges meet all these requirements. Excise charges use mandatory standardised values per quantity of product. Independent of the production process, these charges do not incentivise resource shuffling. They also avoid complex monitoring, reporting and verification requirements, thereby allowing for coverage of the full value chain. Because excise charges do not

### **Box 2. Continued**

to the workshop. Questions were raised about how the liability is passed along the value chain, waived on exports and imposed on imports of materials embedded in products.

Despite the solutions that standardised values could provide, political obstacles remain. Participants expressed concerns related to the reform's timeline, its interaction with ETS and CBAM reform, and whether it would cover only organic chemicals (not yet included in CBAM) or also steel and aluminium. Participants discussed how the proposal would be perceived by different political constituencies, and how to communicate the fact that costs to consumers would not differ from those under the current trajectory of the ETS towards full auctioning. Although the additional carbon pricing revenue from standardised values would be assigned to climate action, participants emphasised the need to ensure that revenues were used to finance climate-neutral production and infrastructure for the circular economy in the basic materials sector.

**Participants welcomed the proposal but called for additional information on product coverage. They expressed the need for quantitative analysis and further sector-specific illustrations to understand the interaction of standardised values with the ETS, and their impact on value chain actors, such as material producers, manufacturing industries and consumers.**

differentiate products based on process or production methods, they can also be waived on exports and still align with WTO principles.

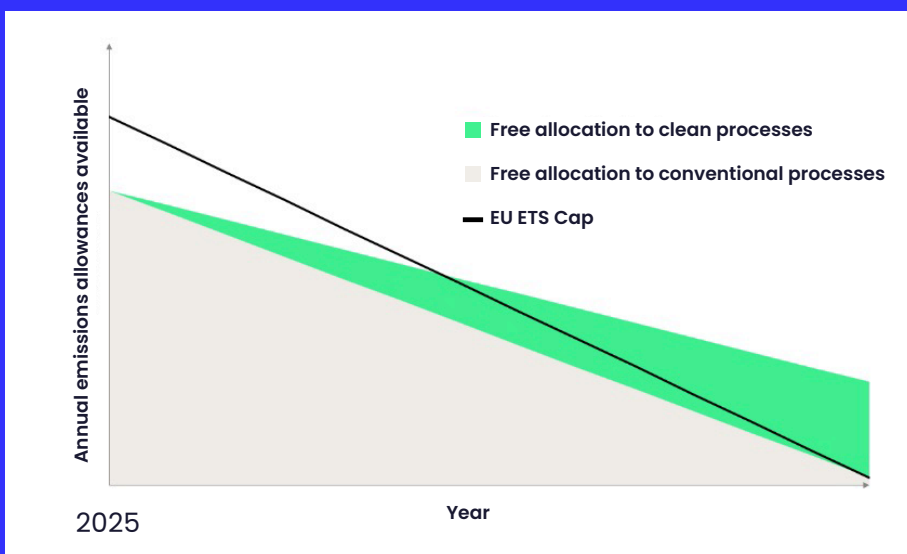
With a CBAM based on standardised values, the EU ETS would continue to cover domestic emissions. Additionally, companies would receive free allowances at the level of the full carbon costs incurred for production of the material with best available conventional technologies. This would address the main carbon cost difference.<sup>1</sup> Carbon contracts for difference (CCfD) or similar mechanisms would be offered to clean production processes, providing reliable remuneration for carbon savings (see Box 3).

A standardised liability would be created when basic materials were produced or imported into the EU. This would also apply to imported materials embodied in products (e.g., steel in a car). The liability would be calculated using the EU ETS benchmark carbon intensity for

“With a CBAM based on standardised values, the EU ETS would continue to cover domestic emissions.”

**Box 3. Free allowances dilemma: maintaining the ETS cap or supporting clean investment**

If free allocation to conventional processes is continued because the CBAM provides insufficient carbon leakage protection, clean production processes will require additional support (see stylised chart below).



**Option 1: Clean processes receive free allocation.** If the incremental cost of clean production was covered by free allowances, increased deployment of clean processes would require more allowances than are available under the ETS cap (see the green area in the graph above). For investors, this inconsistency would undermine the credibility of the approach.

**Option 2: Dedicated financial support to cover the mitigation costs of clean processes.** If clean processes did not obtain free allowances, they would require direct financial support. This would increase the need for public funding. A CBAM with standardised values would restore the full revenue of carbon pricing set by ETS, providing sufficient revenue to fund the decarbonisation of the basic materials industry (Neuhoff et al., 2026)

1. For example, steel plants with 5% higher emissions have residual costs of only €7 per tonne of steel.

the material and the EU ETS carbon price, multiplied by the weight of the material. For the liability on the product (not the production input), full border adjustment would be possible in line with WTO principles – by, for instance, waiving the liability on exports (Ismer et al., 2023). In this way, the EU ETS and the CBAM would not distort trade flows or discriminate against domestic or foreign producers. However, this approach would not provide trade-related incentives for third-country decarbonisation, which would need to be achieved through other mechanisms, such as international CCfDs. This would be the main trade-off between CBAM design options, making the necessary compromise between domestic clean investments, international decarbonisation incentives and carbon leakage protection.

In its 2021 assessment of CBAM options, the European Commission evaluated this type of design (European Commission, 2021). The mechanism outperformed all other options in avoiding carbon leakage risk and creating incentives for domestic industry to decarbonise. The EU ultimately decided not to use standardised values because it wanted to encourage third-country decarbonisation through trade incentives. However, in times of geopolitical fragmentation, this objective has left EU climate policy vulnerable to shifts in global carbon pricing. In the meantime, maintaining incentives for third-country decarbonisation has ensured that European firms are at severe risk of carbon leakage.

Many interviewees spoke positively of this reform option as a means to address several deficiencies of the current mechanism. However, most of them acknowledged that their lack of information on, and understanding of, the design prevented them from offering a definitive perspective.

## Policy implications

Our interviews with industry stakeholders show that merely extending free allocation is not a viable long-term solution, as it weakens the carbon price signal and delays the transition to climate neutrality. Similarly, while there is widespread support for green lead markets as a complementary tool to stimulate demand for low-carbon products, they cannot replace carbon pricing mechanisms.

Therefore, a sector-specific approach is essential. The cement industry views the CBAM favourably because of its short value chain and limited export exposure in most EU countries. However, the aluminium and chemicals sectors face prohibitive administrative burdens and circumvention risks. Stakeholders in the steel sector may be divided on some issues, but they are in agreement on the need for an export solution.

Through an ETS and CBAM reform based on standardised values, EU climate policy could provide carbon leakage protection and a clean investment framework to sectors with complex value chains. However, this would reduce direct incentives for decarbonisation in third countries. Further analysis is needed to better understand how other cooperation mechanisms, including those based on dedicated funding from EU carbon pricing, could meaningfully contribute to global climate action.

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“Merely extending free allocation is not a viable long-term solution.”



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