

Future of emissions trading in the EU

EU ETS – CBAM Package: A Strawman

This project benefitted from an Advisory Group which included:

Cefic, Cement Europe, Cepi, EdF, Enel, EuLA, Eurelectric, Eurofer, Eurometaux, European Aluminium, ExxonMobil, Fertilizers Europe, FuelsEurope, PGE, the Government of France, the Government of Denmark, the Government of Germany, and the Government of Poland.

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The views expressed in this paper are attributable only to the authors of this paper and not to the supporters of this initiative or any stakeholders that have participated in the consultation process.

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1. Summary

The CBAM was introduced not as a stand-alone mechanism, but one that accompanies the EU ETS and is meant to prevent the risk of carbon leakage. Given the sometimes-interchangeable way in which carbon leakage and competitiveness are used, what needs to be clearly stated is that carbon leakage is the result of competitive pressures brought about by asymmetrical climate change policies, in this case carbon pricing through the EU ETS, which is at a level not comparable to other jurisdictions, except the UK and Switzerland.

Besides addressing the risk of carbon leakage, other objectives came into play in the introduction of CBAM, including incentivizing the introduction of carbon pricing in other jurisdictions as well as allowing the EU to move from free allocation to auctioning in the EU ETS. The latter is not a minor consideration for some stakeholders. It must be emphasized that this multiplicity of objectives is not without consequences in formulation policy.

Since the EU has taken a strong and public position that it wants to align the CBAM with the WTO, the fundamental principle that is being promoted is that of parallel treatment, that is CBAM and ETS should mirror each other. Consequently, whenever there is a mirroring gap this should be high on the list for consideration for potential intervention.

This paper identifies several “gaps”, where the articulation between EU ETS and CBAM leads to a challenge in different areas. All gaps identified in this paper are real, but the impact and urgency of each of them will inevitably vary, so they should not all be put at the same level.

While carbon leakage (and competitiveness) was always on the list of considerations when dealing with EU ETS, it has now also risen at the top of the political agenda. The climate crisis and industrial crisis are now seen as real and in urgent need to be addressed. It is therefore only natural that any issue or gaps in the CBAM/ETS articulation that impact competitiveness should be also high on the priority list of issue to be addressed.

The study goes into some detail, but even if most issues will have some interrelation with competitiveness, several merit special highlighting, and they include:

- Lack of export provision in CBAM (and significant adequacy concerns with recent thinking from DG TAXUD on a potential – albeit temporary – solution)
- Circumvention
- Scrap treatment
- Inclusion of Scope 2 emissions
- Consideration of default emission factors at the national or sectoral level
- Consideration of downstream products
- Impact of cost of compliance
- Lateral expansion of CBAM

A second key issue is how the revenue generated by the introduction of CBAM/phase-out of free allocation is to be used. The introduction of CBAM alters significantly the amount of revenue that the EU ETS and CBAM combination will bring. This will be due primarily to the increase in auctioning in the EU ETS as CBAM is introduced, as well as the CBAM revenue itself (even if ETS revenues dwarfs the CBAM ones).

Together, depending on how this revenue is used, this is a very important issue for competitiveness, the speed of decarbonization of EU industry and potentially, market functioning. It may also impact market functioning, including the price of EUAs, as rapid decarbonization will decrease demand. The architecture of the MSR during the MSR review in 2026, may also have to account for that.

There are other impacts identified, and some of them will be less urgent or maybe unclear to the level of impact, urgency to address, or level of materiality, or maybe inevitable given the EU ETS/CBAM interaction. They will nevertheless require monitoring and intervention if warranted. Other issues that will emerge will include:

- Expansion of the EU ETS to new sectors
- Inclusion of international credits in the EU ETS
- Issue related to inclusion of CDR in the EU ETS
- Linking to other ETS systems

In addition, the study identified several “technical issues” that may result from the interaction between CBAM and EU ETS:

- MSR review
- Hedging impacts
- MRV
- Governance

Way forward - Strawman

ERCST would suggest that the following actions ought to be considered:

- **Speed up decarbonization:** The study identifies solutions to several issues that need to be tackled and with many possible solutions, each with side effects or just postponing the issue, not addressing it. This study thinks that the best way to tackle them is to speed up decarbonization. Directing auctioning and CBAM revenue to CBAM industry sectors is a necessary condition to ensure a speed up of decarbonization.
- **Backload CBAM and free allocation phase-out in EU ETS:** The introduction of CBAM, while necessary, will increase costs to industry, introduce the regulator as an arbiter for how the money is to be spent, and takes away resources from industry that could be used to speed up decarbonization. “Backloading” CBAM, which is really a delay, is put forward as potential solution, which includes a very low percentage of CBAM until the last years. This could be coupled with an extension of the CBAM period from 2036 to 2039.
- **Address exports in CBAM:** This has been recognized as an issue and will be addressed. ERCST proposes the use of **incentive-aligned export adjustment certificates**. This system would issue non-tradable, non-transferable certificates based on emissions benchmarks, which producers could then exchange for EU ETS allowances to offset their carbon costs for exported goods. This is intended to encourage decarbonization while maintaining competitiveness and ensuring WTO compatibility. What seems as the DG TAXUD solution is discussed in some detail in the paper, but it is felt that it is a “shotgun” approach.
- **Pause plans to include Scope 2 emissions in CBAM for additional sectors and examine the reform of the indirect cost compensation mechanism that would pave the way for their eventual**

inclusion: Circumvention, including resource shuffling, are a real possibility and any solution comes with costs¹. There is no perfect solution, they all come with a certain price to pay. Backloading CBAM until resource shuffling is less a problem and not include Scope 2 emissions is profiling as a combination that can go a long way to address the issues that emerge. Circumvention/resource shuffling is a real risk, and the inclusion of Scope 2 emissions increases that risk. As part of this equation, the EU should have a look at how the indirect cost compensation mechanism could be geared such that it compensates EU producers for the passed-through carbon costs above the costs associated with their actual emissions, as this could pave the way towards expanding CBAM to Scope 2 emissions for additional sectors.

- **Address scrap:** While there is no clearly emerging solution to deal with the multifaceted challenge of scrap, the inclusion of pre-consumer (process) scrap in the CBAM while continuing to treat post-consumer scrap as “carbon free” is a reasonable compromise: it partly addresses the challenge, scores well in terms of legal feasibility, while at the same time not compromising circularity incentives for foreign producers.
- **Downstream expansion:** On a case-by-case basis to find “sweet spot” and just know that there may inevitably be some leakage just below wherever that spot is. And allow for non-punitive use of defaults to deal with the complexity you introduce by extending downstream.
- **Lateral expansion:** Examined further sectoral coverage but consider trade implications – what trade partners become involved.

2. Objective of the study

- The EU Emissions Trading System (EU ETS) and the EU Carbon Border Adjustment Mechanism (CBAM) are two distinct but interlinked climate policy instruments, that should be seen together as one evolving policy framework.
- The objective of this paper is to identify issues/gaps, and provide solutions, that emerge from the interaction between the EU ETS and CBAM.
- This paper considers that a gap exists if there are issues that need to be addressed, leading to possible legislative action:
 - Following the introduction of the CBAM
 - As a result of possible future changes in the EU ETS and /or CBAM
- In examining the identified issues, the paper addresses four main questions/areas:
 - What is the issue?
 - Why is this an issue?
 - What are options to address the issue?
 - A discussion of the options
- The issues identified will be prioritized: some issues may need attention and intervention as they affect the fundamental functioning or effectiveness of the ETS or CBAM, while others may be of concern but would only require monitoring for the time being.

¹ Marcu A., Mehling M., Cosbey A., Fleury L. (2025), The EU CBAM in Practice: The Challenge of Resource Shuffling, <https://ercst.org/the-eu-cbam-in-practice-the-danger-of-resource-shuffling/>

3. Background

- While conceived as complementary, the interaction between these two instruments is becoming increasingly complex. The CBAM should mirror the provisions of the ETS, but operates at the product level, whereas the ETS functions at the installation level. Ensuring that there are no issues that emerge from their joint functioning is not a given, as they have emerged and are evolving under separate legislative processes.
- The upcoming months will be marked by key policy developments:
 - The next review of the EU ETS is due in 2026 under Article 30 of Directive (EU) 2023/959,
 - The review of the CBAM, mandated by Article 30 of the CBAM Regulation, due by the end of the transitional period (i.e. before 1st January 2026).
 - A CBAM legislative proposal setting out a (temporary) export solution, and the extension to downstream products, as well as an anti-circumvention strategy, are due in December 2025.
 - A series of CBAM secondary legislation documents is due in December 2025.
- The objective of the CBAM is broadly to ensure that embedded carbon in imports pays the same amount as that emitted by EU producers. A limited number of sectors have been so far included in the EU CBAM. While it is meant to be, the CBAM is not a perfect mirror of the EU ETS. In addition, the ETS in the EU is expanding to potentially cover new sectors such as municipal waste, and agriculture. This expansion raises questions about the scope and architecture of the CBAM and EU ETS, and how the risk of carbon leakage will be addressed in these cases, and whether that affects the EU ETS/CBAM dynamics.

3.1. Definition of carbon leakage

- Broadly speaking, carbon leakage occurs when emission reductions in countries resulting from stricter greenhouse gas mitigation policies, are partially or completely offset by emission increases in countries that apply less stringent policies².
- According to the Commission³, the term ‘carbon leakage’ refers to the transfer of CO₂ emissions from one country to another when, due to strict climate policies, companies relocate their production to countries with weaker emission constraints which may or may not contribute to an increase in global greenhouse gas emissions. The formula for calculating it is the emissions increase in other countries divided by the emissions reduction in the implementing country, expressed as a percentage.

$$\text{Carbon leakage} = \frac{\text{Emission increase in non – EU regions}}{\text{Emission reduction in the EU}}$$

- The reduction in emissions in the EU may result from a reduction in production within the EU or from a reduction in demand for the products concerned.
- There are multiple dimensions and channels of carbon leakage including:

² For instance, the IPCC Fifth Assessment Report defines leakage as the “*phenomena whereby the reduction in emissions (relative to a baseline) in a jurisdiction/sector associated with the implementation of mitigation policy is offset to some degree by an increase outside the jurisdiction/sector through induced changes in consumption, production, prices, land use and/or trade across the jurisdictions/sectors*”. Source: p.125, IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp. <https://archive.ipcc.ch/report/ar5/syr/>

³ European Commission. (2021). Impact Assessment Report accompanying the document Proposal for a regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism. SWD(2021) 643 final. Part 1, Table 4. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021SC0643>.

- **Production leakage:** whereby the asymmetry of climate policies between the EU and other countries leads companies to relocate production or reduces their market share vis a vis imports and exports. This includes direct relocation, whereby companies move carbon-intensive production to countries with less stringent regulations to avoid carbon costs; and trade-related production substitution, whereby stricter domestic policies render domestic products more expensive and prone to (partial or complete) substitution by cheaper imports from countries with lower or no carbon costs, increasing production and emissions in those exporting countries.
- **Investment leakage:** similar to production relocation, companies redirect their investments to countries with less stringent climate policies to avoid associated carbon costs. With time, as domestic plants reach end of life, this gives way to production relocation. Investment leakage may also occur because of (future) policy uncertainty.
- **Exports leakage:** this refers to the carbon leakage risk associated with goods manufactured in the EU for export, arising from the competitive disadvantage and potential loss of market share that EU producers may face due to higher carbon costs on the global market.
- **Value chain leakage:** this refers to the displacement of carbon leakage risk to downstream value chains when climate measures such as an ETS cover the upstream.
- One consideration with respect to carbon leakage is the extent to which it may or may not contribute to an increase in global greenhouse gas emissions, i.e. whether the emissions reduction domestically are partially offset, completely offset, or more than counterbalanced by increases in emissions elsewhere (see Section 3.2 for more on this).
- According to the carbon leakage formula provided above, leakage of 50% would mean that half of the emissions reduction achieved domestically was cancelled out by foreign emission increases. A figure greater than 100% would mean that carbon leakage actually caused global emissions to increase. For perspective, the Commission's impact assessment of the CBAM modelled a complete removal of free allocation without a protective CBAM and predicted leakage in the CBAM sectors of 42%.⁴ Emissions reduction in the EU that appears in the denominator of the leakage formula can stem from different mechanisms, including demand destruction. Carbon leakage below 100% does not necessarily equate to a desirable outcome – while it is not harmful in terms of global emissions, it is harmful economically as it would lead to EU de-industrialization.

3.2. Objectives of CBAM

- The objective of CBAM is outlined in Article 1(1) of the CBAM Regulation⁵:

“This Regulation establishes a carbon border adjustment mechanism (the ‘CBAM’) to address greenhouse gas emissions embedded in the goods listed in Annex I on their importation into the customs territory of the Union in order to prevent the risk of carbon leakage, thereby reducing global carbon emissions and supporting the goals of the Paris Agreement, also by creating incentives for the reduction of emissions by operators in third countries.”

⁴ European Commission. (2021). Impact Assessment Report accompanying the document Proposal for a regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism. SWD(2021) 643 final. Part 1, Table 4. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021SC0643>.

⁵ Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism, <https://eur-lex.europa.eu/eli/reg/2023/956/oj/eng>

- As outlined in ERCST's '*The EU CBAM in Practice: The Challenge of Resource Shuffling*' report (2025) ⁶, the objectives of CBAM can be interpreted beyond dealing with carbon leakage. CBAM can be broadened to other objectives of:
 - Address the risk of carbon leakage by ensuring that we mirror the EU domestic carbon price on the carbon intensity at product level.
 - Address the risk of carbon leakage and competitiveness by ensuring that the effective carbon price in an exporting country is mirroring the EU domestic carbon price on carbon intensity at the sector level.
 - Preventing an overall increase in global GHG emissions.
- The latter objective of '*Preventing an overall increase in global GHG emissions*' is especially relevant when assessing the broader climate change impacts of the EU ETS and CBAM. Both instruments influence not only domestic emissions abatement but also global emissions through trade and production adjustments. In this view, carbon leakage is understood as a situation where the EU carbon pricing leads to an increase in emissions outside the EU that offsets the reductions achieved within the EU. The emphasis shifts from levelling the playing field and cost parity to environmental effectiveness at the global level.
- The key analytical challenge is to determine whether the EU's carbon pricing framework delivers net global mitigation rather than merely reducing emissions within EU borders while displacing them abroad.

4. Mapping of key problem areas

This section provides a roadmap of the main issues, gaps, and uncertainties that emerge when considering the EU ETS and CBAM as a package. The individual issues are then analyzed in more depth in Section 4.

- **Issues from the current design:**
 - Competitiveness concerns
 - Cost of compliance
 - CBAM's lack of exports provision
 - Product level focus (CBAM) vs installation/producer-level focus (EU ETS)
 - Market functioning
 - Hedging
 - Revenue changes and revenue allocation
- **Issues that will emerge under future potential developments in EU ETS and CBAM:**
 - ETS developments
 - Expansion of ETS scope, ETS2 and ETS Agri
 - Inclusion of CDRs as a compliance instrument
 - Inclusion of international credits
 - EU ETS linkage with other ETSs
 - MSR Review

⁶ Marcu A., Mehling M., Cosbey A., Fleury L. (2025), The EU CBAM in Practice: The Challenge of Resource Shuffling, <https://ercst.org/the-eu-cbam-in-practice-the-danger-of-resource-shuffling/>

- Slower phase-out pathway of free allocation
- CBAM developments
 - Expansion of CBAM to new sectors
 - Expansion of CBAM to downstream products
 - Expansion of CBAM to Scope 2 emissions
 - Scrap treatment
- **Issues that relate to regulatory process**
 - Institutional streamlining

5. Deep dive – Issues in current design of ETS and CBAM

5.1. Competitiveness concerns

5.1.1. Cost of compliance

What is the issue?

- The gradual replacement of free allowances with CBAM will accelerate the rise of compliance costs for CBAM-covered industries in the coming years.
- Instead of receiving a portion of their emission allowances for free, CBAM-covered industrial producers will have to purchase allowances for their domestic emissions and CBAM certificates for imported inputs.
 - These costs will intensify quickly: Between 2026 and 2034, around 287 million allowances⁷ that would have been free are set to be auctioned instead. This represents roughly between €23 billion to €28.7 billion of carbon costs shifted onto industry (at an ETS allowance (EUA) price of €80/t or at €100/t)⁸.
 - The impact varies by sector: Sectors with high carbon intensity, limited decarbonization options or previously large free allocation will see a bigger cost surge than others.

Why is that an issue?

- The rise of compliance costs may affect decarbonization plans, investment decisions and industrial competitiveness.
 - **Investment decisions:** While the introduction of the CBAM enables some degree of carbon cost pass-through (in the domestic market), the overall rapid rise in carbon costs can strain companies' finances and potentially crowd out resources for decarbonization investment. It also has to be noted that free allocation is a producer level measure allowing ETS installations to use free allowances (or the value thereof) to support decarbonization projects, independently of any regulatory approval of where the money should be spent. This has allowed private actors to take investment decisions based on their own needs. If instead EUR

⁷ Veyt CBAM, benchmark changes, and free allocation reduction (2023), <https://veyt.com/cbam-benchmark-changes-and-free-allocation-reduction/>

⁸ Based on own ERCST calculations.

28.7 billion will now be spent on securing ETS allowances, the ability to fund new low-carbon processes will diminish.

- **Downstream competitiveness issues and wider economy effect:** Higher compliance costs, if they cannot be recovered from the market, will reduce profitability and discourage investment in upstream goods in Europe as they will be less competitive. CBAM will enable the carbon cost pass through down the value chain, however, at the expense of rising prices of downstream products, eroding their competitiveness not just domestically but also globally when exported. The downstream cost pass-through could have a wider economy effect through supply chain changes, potentially leading to inflation, altered consumer spending, and impacts on employment, exports, and innovation. Research shows that increased upstream costs due to climate policies like CBAM directly impact downstream competitiveness, particularly in sectors where the carbon-intensive input forms a significant part of the product's value. For example, analysis of the aluminum value chain demonstrates this risk, estimating that without downstream product coverage, the costs for producers of aluminum window frames could rise by up to 13%.⁹
- **Decarbonization plans:** Industrial stakeholders argue that simply removing free allocation will not alter the incentives for decarbonization. The “generally accepted” view, especially in the environmental community, is that free allocation mutes the carbon price signal, thereby reducing incentives to invest in emissions abatement. However, Coase’s “independence principle,” challenges this view. It holds that free allocation allows firms to make independent investment decisions by using the market value of free allowances to fund decarbonization measures according to their specific needs and technological readiness. Under this principle, free allocation does not weaken the incentive to decarbonize but rather provides financial flexibility to undertake such investments independently. Instead, removal of free allowances may only impose additional costs. In other words, without additional support or innovation breakthroughs, higher carbon costs risk penalizing firms without resulting in a reduction of emissions intensity.

How to address it?

- A gradual phase-out of free allowances over 2026–2034 is already scheduled, as illustrated in Figure 1 below. However, that could be revisited especially with current signs of EU competitiveness faltering.
 - **Backloading CBAM:** One potential approach could be to modify the shape of the CBAM and free allocation phase out curves for CBAM-covered sectors, that is “backloading” the free allocation phase-out to the very end of the 2026-2034 period (i.e., in 2033-2034). This can be accomplished by maintaining a very low flat rate in the phase-out of free allocation in the initial years and exponentially increasing the rate in the final years (see Figure 2).
 - **Extension of the phase-out period:** Another approach, together with backloading, could be to extend the free allocation phase-out period for CBAM-covered sectors from the current 2026-2034 to 2026-2039 (see Figure 3).

⁹ Alexandra Maratou & Andrei Marcu, ‘The Aluminium Value Chain and Implications for CBAM Design’ (European Roundtable on Climate Change and Sustainable Transition, June 2021) <https://ercst.org/wp-content/uploads/2021/08/The-aluminium-value-chain-and-implications-for-CBAM-design.pdf>.

- **Maintaining non-zero free allocation:** Another option, with or without backloading, would entail phasing *down* (rather than phasing *out*) free allocation for CBAM-covered sectors. This would translate into gradually declining free allocation for CBAM-covered sectors during a CBAM phase-in period but keeping in a non-zero free allocation level in the long run that would aim to address any remaining risk of carbon leakage not addressed by the CBAM (e.g. exports-related, or value chain leakage). CBAM financial obligations for imports would be adjusted to account for any remaining free allocation given to EU producers under the EU ETS (see Figure 4)
- **Better use of ETS revenues:** Only a small fraction of the revenues generated from the auctioning of EUAs has been spent by Member States on industrial decarbonization. 78% of ETS revenues in Phase IV went to Member States. Until the last revision of the EU ETS Directive in 2023, Article 10 (3) stipulated that Member States must allocate at least 50% of the auction revenues to climate and energy-related purposes. Since June 2023, Member States have been obliged to use 100% of EU ETS revenue to support climate action and energy transformation purposes. However, still only 1.85% was spent on industrial decarbonization¹⁰, the rest is spent on ‘Energy supply, grids and storage’ (43%), followed by ‘Public transport and mobility’ (21%)¹¹. The resource needs for the decarbonization of industries covered by the EU ETS are sizeable, and while direct revenues from auctioning would not in any way be able address the whole problem, it is still a significant amount of money, and it will continue to grow.

¹⁰ The Netherlands (with 49% of their EU ETS auctioned revenues), Belgium (18%) and Croatia (less than 1%) were the only EU Member States that reported expenditures under the industrial decarbonization category.

¹¹ ERCST (2025), 2025 State of the EU ETS Report, <https://ercst.org/2025-state-of-the-eu-ets-report/>

Figure 1: Scheduled phase-out

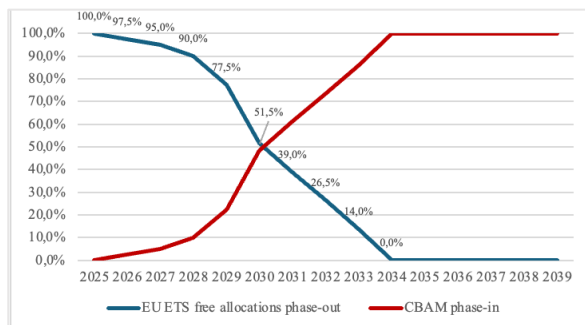


Figure 2: Backloading

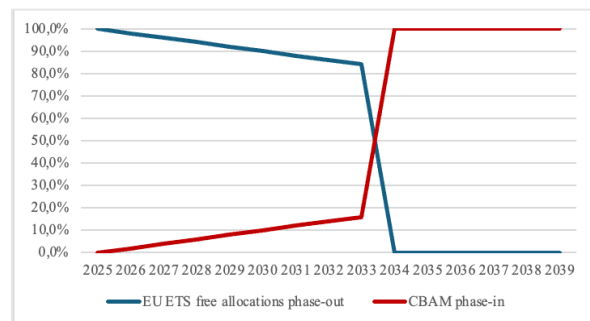


Figure 3: Backloading & extension

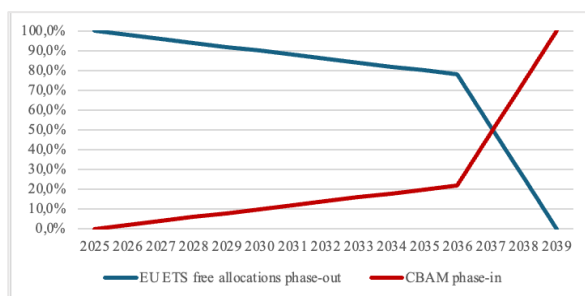
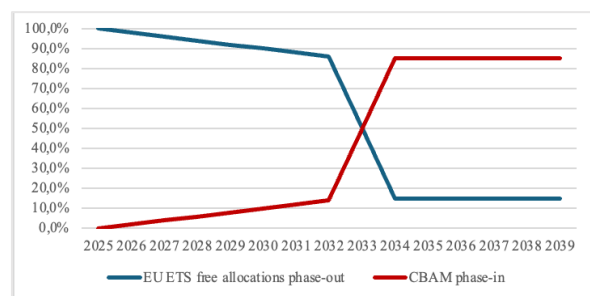


Figure 4: Backloading & phase-down



Source: ERCST. Disclaimer: Percentages in Figures 2, 3 and 4 are arbitrary, for illustration purposes only.

Discussion of options

- Each of the proposed options represent trade-offs between addressing competitiveness and ensuring signals for decarbonization.
 - Adjusting the phase-out schedule of free allocation, either through backloading or extending the period beyond 2034, could ease the immediate cost burden on industry and provide additional time for low-carbon investments to materialize. It will be seen by some stakeholders as backtracking on environmental commitments may reduce the impact of CBAM on other jurisdictions momentum to install carbon pricing and reduce Member State revenue that can be used for decarbonization. By and large, keeps financial resources in the hand of the private sector, rather than depend on the judgement of the regulator.
 - The CBAM phase in schedule for the current covered sectors has been communicated both domestically as well as internationally. Changes will raise questions about regulatory stability and predictability from those that have taken steps based on current information, as well as for those that may be advantaged by current regulation.
 - Maintaining non-zero free allocation in the long run could act as a safeguard against residual forms of leakage, particularly export-related or value chain leakage, yet would raise lower revenues in the long-run and potentially complicate the policy framework through maintaining two closely interacting carbon leakage policies indefinitely.
 - Targeted use of ETS revenues can help address investment constraints and preserve the incentive to innovate, but their effectiveness depends on timely and transparent allocation mechanisms. Moreover, in general earmarking of revenues can be inefficient (risk of

misallocation) unless there is perfect foresight by governments in allocating resources to where they are most needed. Markets, in general, imperfect as they are, will be seen as a more effective approach.

- Overall, the effectiveness of each option hinges on its capacity to balance economic resilience with the environmental objectives of the EU's carbon pricing framework.

5.1.2. CBAM's lack of exports provision

What is the issue?

- There is no provision for exports in the CBAM Regulation to replace the free allocation currently available to protect EU exporters of CBAM covered goods from the risk of carbon leakage.

Why is that an issue?

- As free allocation is gradually phased out, the CBAM will protect EU industries from carbon leakage on imports. However, because CBAM offers no export protection, EU exporters remain fully exposed to their domestic carbon costs. This structural asymmetry places them at a severe competitive disadvantage in external markets, jeopardizing export volumes and ultimately heightening the overall risk of emissions shifting outside the EU. This is even more crucial for sectors involving co-production processes¹², which do not have the option to adjust activity levels to stay within domestic market layers.
- This lack of export provision increases the risk of export-related leakage and disadvantages EU producers in global markets.
 - **Competitive disadvantages in global markets:** The CBAM creates a structural imbalance by pricing carbon on imports but leaving exports fully exposed. EU exporters must compete on price in non-EU markets against foreign producers who face little to no carbon cost.
 - **For exporters:** This significant cost disparity compromises their competitiveness, threatens their export volumes, and risks the economic viability of Europe's export-oriented, energy-intensive industries. The share of production exported can be significant, on average up to 20% of CBAM-covered goods (e.g. 19-20% for steel and aluminum and ~16% for fertilizers in 2019¹³). Competitive concerns are not evenly distributed, but there are installations that are highly depending on exports. In other cases, there is a seasonal pattern that raises vulnerability (e.g. fertilizers)¹⁴. Overall, a loss of exports can compromise the utilization factor, reducing overall viability of the enterprise/installation.
 - **For domestic-market producers:** The harm from CBAM's lack of export adjustment is not limited to exporting firms. Even producers selling 100 % inside the EU can be severely affected. In globally traded commodity sectors, EU domestic prices are

¹² For example, a refinery is a co-production process, with a range of refined petroleum products co-produced simultaneously in the same facility. Refiners have limited flexibility on the proportion of the different products they produce.

¹³ p.3, in ERCST (2024), Review of Carbon Leakage Risks of CBAM Export Goods, April 2024, <https://ercst.org/review-of-carbon-leakage-risks-of-cbam-export-goods/>

¹⁴ In fertilizer markets, the lack of exports combined with seasonality of demand and low storage capacity means that the manufacturing installations probably cannot operate at an economically viable rate of capacity. For more information see p.22 in p.3, in ERCST (2024), Review of Carbon Leakage Risks of CBAM Export Goods, April 2024, <https://ercst.org/review-of-carbon-leakage-risks-of-cbam-export-goods/>

anchored to world market prices. When EU producers lose export markets because of unrebated carbon costs, the displaced volumes flood the internal market (or plants close). This excess supply rapidly pulls EU prices down toward the lower costs of non-EU competitors who pay little or no carbon price. The competitive disadvantage therefore affects the entire EU industry, regardless of whether a company exports directly.

- **Risk of increased overall emissions:** With the phase-out of free allocation, EU producers will have to pay the full ETS carbon price on all output, including exports. Since CBAM provides no export relief, EU goods are bound to lose market share to non-EU competitors with lower or no carbon costs in global markets and a higher emission intensity. This trade-related substitution of EU production may lead to an increase in global emissions.

How to address it?

- Numerous proposals have been introduced to bridge this gap, seeking a balance between providing direct support to exporters and ensuring compatibility with WTO rules.
 - **ERCST's solution: Incentive-aligned export adjustment certificates:** This system would issue non-tradable, non-transferable certificates based on emissions benchmarks, which producers could then exchange for EU ETS allowances to offset their carbon costs for exported goods. This is intended to encourage decarbonization while maintaining competitiveness and reducing the risk of WTO incompatibility.
 - **Exemptions, rebates, or compensation within the CBAM and EU ETS:** These are direct adjustments to the ETS cost burden on exporters. These solutions essentially use the ETS system in itself (via mechanisms replacing free allocation) as a solution for export treatment, such as an export rebate (a refund for ETS costs paid on exported goods) or exemption (removing the ETS obligation on the exported share of production).
 - **External support mechanisms:** These involve using public financial tools outside of the direct CBAM/ETS regulation to support competitiveness. Crucially, the ETS system is also used as a solution here via using ETS auctioning revenue set aside to help decarbonize export-dependent sectors through instruments like Carbon Contracts-for-Difference (CCfDs) or targeted investment support.
 - **Alternative instruments:** This category introduces novel, market-compatible solutions to address competitiveness and WTO compliance concerns. A key example includes climate contributions¹⁵. This involves exporters making a payment or contribution related to their exported emissions, often to a fund that supports global climate projects or the EU's decarbonization efforts. This is viewed as a way to maintain a price signal while addressing WTO concerns.¹⁶
 - **Alternative to carbon pricing (policy mix):** This approach, though not a solution within the CBAM framework itself, is mentioned as a fundamental shift where the EU would simply

¹⁵ Neuhoff, K., et al. (2025). Industrial Decarbonization in a Fragmented World: An Effective Carbon Price with a "Climate Contribution". Berlin: DIW et al. <https://www.econstor.eu/bitstream/10419/311220/1/Industrial-decarbonisation-fragmentedworld.pdf>

¹⁶ Climate contributions as an excise-style charge (indirect tax) on domestically produced and imported basic materials, refunded on exports. It is proposed as a legal workaround for the EU's export problem. Since the ETS carbon price cannot be refunded on exports (as it is a direct tax), this separate refundable product tax offsets ETS costs for exporters, ensuring their net carbon cost remains zero while keeping EU exporters competitive.

exclude these sectors from carbon pricing altogether and instead switch to alternative policy instruments, such as product standards (e.g., specifying maximum allowable emissions per unit of product)¹⁷.

- **DG TAXUD's solution:** On July 2nd, 2025, the European Commission published a Communication on Delivering the Clean industrial Deal I¹⁸, including a solution for export treatment under the CBAM Regulation. The Commission intends to make a dedicated proposal using the revenues generated by CBAM – which will be extended – to support production at risk of carbon leakage. This solution would allow the affected producers to be compensated proportionally to the phasing out of the free allowances subject to deliverables on long-term decarbonization¹⁹ established based on objective criteria. Operators eligible for this compensation will be operators of EU ETS installations producing CBAM goods at risk of carbon leakage from exports, fulfilling decarbonization conditions. All EU ETS installations producing an eligible good will benefit from the measure, independently of whether they export the products or not. The publication of the legislative proposal is planned for the end of 2025, developing two measures: (a) a temporary scheme as a self-standing instrument, and (b) a permanent solution in the context of the ETS Review in 2026.

Discussion of options

- ERCST's incentive-aligned export adjustment certificates: This solution is considered well-balanced because it is designed to be WTO-compatible (by avoiding cash rebates), effective in offsetting the carbon cost asymmetry, and crucially, structured to incentivize deeper decarbonization by rewarding producers who outperform their industry benchmark. The primary drawback of this mechanism is the added administrative burden.
- Exemptions, rebates, or compensation within the CBAM and EU ETS: These solutions offer the most direct and simple way to restore competitive parity by neutralizing the carbon cost on exports. However, their primary drawback is a high risk of challenge under WTO rules, as trade partners are likely to view them as illegal export subsidies, undermining their durability.
- External support mechanisms: Mechanisms to incentivize decarbonization, funded by ETS auction revenue, are highly attractive because they are domestic subsidies for production, making them generally WTO-compatible and effective at driving long-term decarbonization. The crucial con is that these mechanisms only provide solutions over the long term (as large-scale innovation takes years), failing to address the immediate competitiveness gap and carbon leakage risk faced by current exporters upon the phase-out of free allocation.
- Alternative instruments: Proposals like Climate Contributions aim to maintain a carbon price signal while potentially aiding WTO compatibility by framing the payment as a climate finance mechanism.

¹⁷ Shifting from carbon pricing to product standards offers an alternative approach outside the ETS and CBAM. While not addressing the export problem directly, product standards remove the domestic financial burden on EU producers by mandating technical compliance rather than payment for emissions, eliminating high ETS-based costs and maintaining competitiveness in third-country markets without requiring export subsidies or rebates.

¹⁸ European Commission. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — Delivering on the Clean Industrial Deal I*. COM(2025) 378 final, 2 July 2025. https://commission.europa.eu/document/download/ae2ea9ea-d037-4920-bbf6-a4183b747e34_en?filename=COM_2025_378_1_EN_ACT_part1_v5.pdf.

¹⁹ According to September 19th, 2025, CBAM breakfast with EU industry associations of CBAM goods producers, the guiding principles will be (a) balance between meaningful and manageable, (b) incentivize decarbonization, (c) limit administrative burden, (c) use existing instruments and processes. Types of investment should be related to energy efficiency and reduction of direct emissions.

The major con is that this solution does not solve the cost disadvantage; exporters still bear the full ETS cost plus the contribution, which would further worsen their competitive position and increase the risk of leakage.

- Alternative to carbon pricing (policy mix): This approach, which proposes to exclude these sectors entirely from carbon pricing in favor of instruments like product standards, is radical but provides guaranteed environmental performance. The massive drawback is that it requires scrapping a core element of the EU's climate architecture, foregoing critical ETS auction revenue, and sacrificing the economic efficiency of carbon pricing.
- DG TAXUD's solution:
 - The funds for compensation are to come from CBAM revenues. ERCST, in its paper entitled "The Use of CBAM Revenues"²⁰, as well as in a letter co-signed by 29 EU think tanks²¹, argued that the majority of CBAM revenues should be used to support exporters in non-EU countries most affected by CBAM and least able to adapt, helping them decarbonize. We continue to support that argument as being the right use for CBAM funds. If financial compensation is to be the chosen EU exports solution, even if ERCST argues for a different solution, then the funds should rather come from EU ETS auction revenues.
 - DG TAXUD's proposed measure would provide support to all EU ETS installations producing CBAM-eligible goods, irrespective of their export volumes. In practice, this operates like traditional free allocation based on total production and therefore must be deducted on the import side. This non-targeted approach could prove inefficient, as it extends support to production that does not require it. Only exported volumes need targeted support to maintain global market-clearing prices and ensure competitiveness.
 - To ensure compatibility with WTO rules, the solution aims to guarantee equal treatment for CBAM-covered goods, regardless of whether they are sold within the EU, exported, or imported. This shows a notable shift in tone, as earlier discussions expressed concerns regarding WTO compatibility of any measure conditioned on exports.

5.1.3. Product level focus (CBAM) vs installation/producer-level focus (EU ETS)

What is the issue?

- The EU ETS point of regulation is on the emitters at the installation level – i.e. compliance is done at the installation level. The CBAM is applied at the product level. This creates discrepancies that need to be examined and may need to be addressed.
- The EU carbon price applies to the entire production of covered EU installations, while the EU CBAM to the share of foreign producers' output exported to the EU. Foreign producers of covered goods do not typically export 100% of their production to the EU.

²⁰ Andrei Marcu, Aaron Cosbey, Michael Mehling, Alexandra Maratou, Sara Svensson. 'The Use of CBAM Revenues' (European Roundtable on Climate Change and Sustainable Transition, June 2024). <https://ercst.org/the-use-of-cbam-revenues/>

²¹ ERCST. 'Declaration: Calling on the EU to direct revenues from the CBAM towards international climate finance' (European Roundtable on Climate Change and Sustainable Transition, November 2024). <https://ercst.org/declaration-calling-on-the-eu-to-direct-revenues-from-the-cbam-towards-international-climate-finance/>

- The installation-focus of the EU ETS (with annual emissions/capacity/production output thresholds) means that certain smaller EU emitters are excluded, even though products from foreign competitors are covered by the CBAM irrespective of installation size or capacity.

Why is that an issue?

- There are two types of implications working in opposite directions with respect to competitiveness gains or losses for EU vs foreign producers:
 - The product-level focus of CBAM versus the installation/producer-level focus of the EU ETS could translate into a competitiveness disadvantage for EU ETS-covered producers:
 - Foreign producers can spread the carbon costs (on their exports only) across their whole production, so foreign producers will have lower average carbon costs, putting them at a competitive advantage when compared to EU producers.
 - The smaller the proportion of the output exported to the EU, the easier it is for external producers to average and absorb the costs of CBAM across the entirety of its production.
 - Cost absorption by foreign producers is not circumvention strictu sensu, yet it enables them to absorb the cost of the CBAM for goods exported to the EEA by spreading the cost across their entire production, essentially cross-subsidizing.
 - While this would be a poor long-term strategy, it might be employed in a strategic effort to maintain market share, or to force EU producers out of the domestic market by dumping products and predatory pricing. The risk of cost absorption is more material for EU imports from countries with significant overcapacities (enabled through state aid), where not every unit sold needs to be profitable.
 - In addition, foreign producers with several production installations encompassing different carbon intensities can avoid, or minimize, the impact of CBAM altogether by selling the less carbon intensive products to the EU and diverting more carbon intensive goods elsewhere (resource shuffling). All EU production is captured by EU ETS prices, irrespective of the jurisdiction where the product is sold. The risk of “shuffling” potential of low-carbon goods for high-carbon goods would increase if CBAM were to include indirect emissions associated with the generation of purchased electricity in sectors that are electricity-intensive, such as aluminum. Currently this is the case only for cement and fertilizers. This is because there is a wide range of emissions intensities for electricity production across different producers in a given sector compared to direct emissions intensities.
 - There is however another aspect that needs to be mentioned – smaller EU installations are excluded from the EU ETS, whereas products from comparably sized foreign installations still have to comply with CBAM.
 - This gives a comparative advantage to smaller EU installations; however, this divergence is expected to disappear in the future as smaller industry installations will be covered by the EU ETS2 starting in 2028 (Council’s general position).
 - While CBAM builds on the installation-level MRV used in the ETS, the need to translate installation data into product-level emissions introduces an additional methodological layer. This inevitably creates differences between the two systems, even if the underlying principles are shared. This results in administrative complexity and increased burden for economic operators,

particularly those who are both an EU ETS-covered producer and a CBAM importer, as they must manage two distinct accounting regimes (installation-level vs. product-level) and report accordingly. This non-harmonization poses a risk of non-compliance and leads to higher administrative costs.

How to address the issue?

- Options for addressing resource shuffling:
 - Stop resource shuffling that originates from the CBAM's coverage of indirect emissions associated with the generation of purchased electricity (where much of the “shuffling” potential lies), by simply not covering indirect emissions under the CBAM.
 - Remove the ability for importers to declare the emissions intensity of individual shipments based on producer data and instead mandate the use of emissions intensity default values for all imported CBAM goods. Such default values could be either elaborated at a global level, for example, set at some benchmark of EU performance, or at a more disaggregated level, for example set at national sectoral values for the EU's major trading partners.
 - Re-focus on domestic industrial decarbonization (e.g. creation of low carbon goods markets through public procurement; expanded fiscal and financial support instruments), and at the same time provide a critical window to accelerate investment and technological transformation by “backloading” and potentially extending the timeline over which free allocation is gradually phased out (see Section 4.1.1 for more details).
- Options for addressing cost absorption:
 - Address the risk of cost absorption via anti-circumvention procedures within the CBAM itself.
 - Cost absorption being essentially dumping, it might also be addressed by means of existing trade remedy channels.

Discussion of options

- **Resource shuffling:** Mandating the use of default values brings some administrative ease and effectiveness, however it removes incentives at the firm level to improve carbon-intensity of production. It punishes producers that are relatively low-carbon, and rewards those that are more carbon-intense than the default level. Moreover, this solution would engender a great deal of political heat from trading partners and would likely run afoul of WTO law²². A combination of the options comprising the backloading/extension of the free allocation phase-out timeline and pausing plans to expand CBAM coverage to indirect emissions would afford transitional support while parallel decarbonization measures take hold. It is a politically demanding yet pragmatic course that balances environmental integrity with political and legal feasibility. At the same time pausing coverage of indirect emissions from electricity generation that are at the root of most resource shuffling potential, would also address the other competitiveness-related concerns arising from their inclusion as described in Section (6.2.3).

²² ERCST (2025), The EU CBAM in practice: the challenge of resource shuffling, October 2025, <https://ercst.org/the-eu-cbam-in-practice-the-danger-of-resource-shuffling/>

- **Cost absorption:** Addressing cost absorption via anti-circumvention procedures within the CBAM itself is preferable to using trade remedy channels. The latter option would come close to arguing that any country without comparable carbon prices is unfairly subsidizing their producers and hence a legitimate target for countervailing duties, thereby risking political heat and retaliation measures from trading partners duties.

5.2. Market functioning

5.2.1. Hedging

What is the issue?

- As importers of products have to surrender CBAM certificates for the products imported in CBAM covered sectors every year, with a some constraints in terms of timing, CBAM introduces a cost and a risk for importers, since CBAM certificates are not tradeable. In any business operators will try and hedge such a risk, that is not possible for CBAM certificates.

Why is that an issue?

- CBAM introduces a cost for EU importers who are mandated to surrender CBAM certificates for the import of CBAM-covered goods. CBAM certificates prices are closely linked to EUAs. For 2026 imports only, CBAM certificate prices will use the quarterly average EUA auction price. From 2027 onward, CBAM certificate prices will be based on the weekly average EUA auction price. Since EUA price volatility can be high, EU importers subject to CBAM may use EUA derivatives to hedge against fluctuations in the price of CBAM certificates.
- The future fluctuations in the price of CBAM certificates can be hedged against via the purchase of EUA derivatives today. Some issues arise from this practice:
 - **Basis risk:** EU importers subject to CBAM may buy EUA futures on the secondary market to lock in prices ahead of purchasing CBAM certificates. While this can reduce exposure to price volatility and support cash-flow planning, it remains an imperfect hedge: the futures price secured may end up higher or lower than the spot price applicable at the time of import.
 - **Difficult forecasting:** According to the adopted Omnibus simplification package for CBAM, the deferral of CBAM certificate purchase to 2027 improves liquidity, but the retroactive payment for 2026 imports makes forecasting and hedging CBAM costs more difficult in practice.
 - **Additional volatility:** As free allocation declines, ETS installations will need to purchase more EUAs through auctions or the secondary market, increasing short-term demand. If EU importers also start entering the ETS market for hedging, this additional demand could add extra trading activity, improving liquidity in the short term. Additional liquidity is positive for market function but could also amplify EUA price volatility as EU importers may hedge simultaneously or based on similar market signals, leading to herding behavior.

How to address the issue?

- **Market monitoring:** Importers should closely monitor EUA price dynamics, futures-to-CBAM price alignment, and long-dated futures liquidity to assess hedging risks and market uncertainty. These insights should inform better forecasting to improve hedging strategies and cost predictability.
- **CBAM hedging instruments:** Financial providers are developing specialized CBAM hedging instruments, such as for instance a “Virtual CBAM Certificate” (VCC)²³, to help importers hedge their CBAM costs. These instruments function similarly to a contract for difference, with the key feature being that the payout is determined by the difference between the locked-in EUA price and the official CBAM certificate average price. This mechanism allows importers to precisely hedge the specific basis risk (i.e. the potential mismatch between the spot market price and their forward hedge). Removing any legal barriers to such risk management tools could help importers manage costs.

Discussion of options

- This is not seen as a fundamental issue that could influence the functioning of the EU ETS, especially during the first years when CBAM coverage is low. Something to monitor.
- Market monitoring is an essential first step for informed forecasting and hedging strategies. However, it is a passive strategy that doesn't resolve the problems such as basis risk or the lack of long-term hedging clarity in the secondary EUA market. It merely aids in navigating, not removing, the uncertainty.
- Specialized CBAM hedging instruments represent a proactive solution offering better cost predictability. While effective for short- to medium-term hedging, their ability to solve the challenge of long-term structural uncertainty for multi-year investments remains difficult.

5.2.2. Revenue changes and revenue allocation

What is the issue?

- The introduction of CBAM and increase in auctioning will produce a significant change in revenues from the EU ETS, and to some degree, CBAM.
 - The phase-out of free allocation will increase the flow of carbon revenue from the industrial sector to the state, primarily national governments (i.e. 78% of auctioning revenue goes to Member States). On the other hand, CBAM will redirect revenues from the importers of CBAM goods to the state, in this case primarily to the EU budget.
 - The number of free allowances to be phased out is estimated at 287 million EUAs (compared to 2025 levels)²⁴—worth roughly €23 billion at €80/t or €28.7 billion at €100/t — between 2026 and 2034. In parallel, CBAM is expected to yield around €11.3 billion per year in its current scope, potentially declining to ~€7 billion when accounting for resource shuffling and the implementation of carbon pricing in third countries.²⁵
 - As free allocation ends and both ETS and CBAM start bringing in more money, who controls these revenues and how they are used becomes an important question. While ETS revenues mainly accrue to Member States, CBAM revenues will become the EU's own resources. There

²³ Virtual CBAM Certificate is a virtual certificate you can buy to lock in your CBAM prices today, offered by Redshaw Advisors. <https://redshawadvisors.com/procurement-trading/cbam-certificates/>

²⁴ Veyt CBAM, benchmark changes, and free allocation reduction (2023), <https://veyt.com/cbam-benchmark-changes-and-free-allocation-reduction/>

²⁵ Sandbag (2025). “The EU CBAM: A Two-Way Street to Climate Integrity?” <https://sandbag.be/wp-content/uploads/Sandbag-KAS-EU-CBAM-Report-.pdf>

is no unified framework governing how the two streams are deployed, nor how they should balance decarbonization investment with industrial competitiveness support.

Why is that an issue?

- **Revenue does not return to industry for decarbonization:** Free allocation freed resources for EU ETS installations (and the enterprises that owned them), allowing them to manage the ‘value’ of avoided carbon costs independently. With the additional auctioning and CBAM revenue, that ‘value’ becomes government revenue. There is no guarantee that Member States or the EU will recycle the money back to affected sectors or be diverted elsewhere. This uncertainty makes it harder for companies to plan long-term investments in low-carbon technologies. Currently, 78 % of total auction revenue goes to MS, which must spend it on climate and energy activities at the national level. However, the current reporting makes it impossible to determine how much of the Member State revenue is given back directly to the ETS covered installations.
- **Uncertainty and revenue variability:** Both ETS and CBAM revenues fluctuate with carbon prices, industrial activity, and policy changes. However, CBAM revenue is particularly hard to predict, not expected to remain consistent and will vary depending on variables outside the EU’s control: import numbers, default value changes in imported products and the carbon pricing levels of foreign ETSs. Relying on CBAM revenue for stable funding is risky and complicates any decarbonization initiatives tied to these revenues.
- **Impact on market functioning:** How governments and the EU spend ETS and CBAM revenues also influences market functioning. If large amounts of revenue are invested in decarbonization effectively, emissions could decrease, reduce EUA demand and possibly soften prices. If more funding is directed to competitiveness support, emissions abatement may be slower, sustaining EUA demand and higher prices.

How to address the issue?

- **Transparency and monitoring:** One option to address this issue is to strengthen and harmonize the monitoring of the use of revenue to have a transparent view of how the revenue is being spent across EU Member States. Member States already report how ETS revenue is spent, however enhanced resolution and consistency across countries is needed. The EU should also track and report how CBAM funds are used to hold itself accountable to use the money in ways that support climate objectives and affected industries.
- **Ensure money stays with ETS sectors:** EU Member States are already obliged to spend 100% of EU ETS revenue to support climate action and energy transformation purposes. However, this is not leading to equal support to industrial installations across MS. On the EU’s side, there is already a proposal that parts of EU own resources will finance climate-related projects (e.g. the Industrial Decarbonization Bank). However, legally ensuring that the ETS industry pushed to decarbonize, see back the revenue is a concrete step towards ensuring that the EU decarbonizes and not deindustrialize.

Discussion of options

- Strict earmarking a portion of all acquired carbon revenues for industrial decarbonization, maximizes impact for ETS installations, but it might be politically difficult to pass, due to competing demands on the funds, including member state budgets, and the need to balance political commitments with

legislative requirements. In addition, earmarking of revenues can be somewhat inefficient (risk of misallocation) given that there is no perfect foresight by governments in order to allocate resources to where they are most needed.

- However difficult politically, it is an option that would address many issues and defuse tensions with industry for whom this has been an issue.
- Consideration should be given for the EU to define principles and be more transparent and explicit on the intended use of revenue e.g. if it strictly commits the revenue to industrial decarbonization, the direction of the impact should be fairly clear. In fact, major investments in decarbonization would reduce the demand for allowances, lowering the price and consequentially making necessary a revisit of the cap.

6. Deep dive – Issues in future developments

6.1. ETS developments

6.1.1. Expansion of ETS scope, ETS2 and Agri ETS

What is the issue?

- There will be an examination of EU ETS expansion to new sectors. Issues, including the risk of carbon leakage will need to be addressed.
- The following sectors are currently under consideration:
 - **Waste incineration (ETS1 extension):** Under Recital 98 and Art 30 (7) of the revised EU ETS Directive (Directive EU 2023/959), the Commission is due by July 2026 to assess and report on the feasibility of including municipal waste incineration²⁶ installations in the EU ETS from 2028. Since 2024, municipal waste incineration plants above a certain threshold are already required to monitor and report their emissions under the EU ETS.
 - **Buildings, road transport and small industries (ETS2):** As part of the 2023 revisions of the ETS Directive, the ETS2 was created to cover the CO₂ emissions from fuel combustion in buildings, road transport and additional sectors (mainly small industry not covered by the existing ETS). All emission allowances in the ETS2 will be auctioned²⁷. ETS2 will become fully operational in 2028 (due to a delay), and a merger of ETS1 and ETS2 is envisaged but unlikely before the European Commission assesses its feasibility and issues a recommendation by 31 October 2031 (according to Article 30i of the EU ETS Directive).

²⁶ The Commission should also assess the possibility of including other waste management processes, such as landfilling, fermentation, composting and mechanical biological treatment, in the EU ETS, according to the same Recital and Article.

²⁷ This is justified in the Directive by the recognition that the buildings and road transport sectors are not exposed to a risk of carbon leakage, however the Directive stays silent with respect the risk of carbon leakage faced by additional sectors such as small industrial installations.

- **Agriculture (Agri ETS, inclusion of agriculture into ETS1, linking system):** Two recent Commission studies^{28,29}, along with the 2040 climate target's emphasis on market-based mechanisms that reflect the true sustainability costs of food³⁰, have sparked discussions on whether the agricultural sector should be included in the EU ETS. While the practical design of such inclusion remains unstated, agriculture is increasingly viewed as a relevant sector that may be brought into the ETS in the future.

Why is that an issue?

- **Risk of carbon leakage and potential inclusion under CBAM:** The main challenge is to assess whether there is a risk of carbon leakage in new sectors potentially included into the ETS mechanism. If carbon leakage risk is identified, including these sectors in the CBAM should be necessary.
 - **Specific issues for ETS 2:**
 - The ETS Directive notes that buildings and road transport face no carbon leakage risk. However, there is a risk of carbon leakage for small industrial installations in sectors that are on the carbon leakage list. This might create an inconsistency between large industrial installations that enjoy carbon leakage protection in the form of free allocation and in the future CBAM (in some sectors), and small installations in a given sector that will have to buy allowances from the outset of the EU ETS2.
 - Other factors, including how the level of EU ETS2 prices will pan out in the short to medium term, as well as how Member States will decide to spend the EU ETS2 auction revenues will have an impact on the magnitude of this discrepancy. Depending on these factors, small EU installations could be better off covered by EU ETS1 and CBAM rather than EU ETS2.
- **Cost of compliance:** Expansion of EU ETS to new sectors and their eventual possible coverage also by CBAM (including downstream) would lead to higher prices for products and major complexity in tracking and verifying embedded CO₂ emissions within the single product. Furthermore, this would introduce administrative burden and complexity.
- **Emission coverage and MRV issues:** If the EU ETS and potentially also CBAM is applied to new sectors, the parallel treatment will need to be examined as there may be gaps or adjustments needed to avoid emerging inconsistencies.
 - **Waste incineration (ETS1 extension):** If waste incineration plants are included in the EU ETS, related CBAM methodologies will need to be adjusted to account for the emissions embedded in waste to energy.
 - **Agriculture (Agri ETS, inclusion of agriculture into ETS1, linking system):** Inclusion of agricultural products into the ETS, or any ETS-like system, would raise questions on how it would be paralleled in the CBAM. MRV for agri-food is hard to implement as emissions for agriculture are not easily measurable due to the more diffused nature of emissions in this

²⁸ Trinomics. (2023). 'Pricing agricultural emissions and rewarding climate action in the agri-food value chain.' Publications Office of the European Union. https://climate.ec.europa.eu/document/996c24d8-9004-4c4e-b637-60b384ae4814_en.

²⁹ European Commission. (2024). 'Incentivising climate action for a sustainable and competitive agri-food value chain'. [Video]. Streaming Service of the European Commission. <https://webcast.ec.europa.eu/incentivising-climate-action-for-a-sustainable-and-competitive-agri-foodvalue-chain-2024-06-19>

³⁰ European Commission. (2024). 'Europe's 2040 climate target and path to climate neutrality by 2050 building a sustainable, just and prosperous society'. Securing our future. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2024%3A63%3AFIN>

sector, with several parts of the value chain harder to measure³¹. This brings complexity to calculate emissions and therefore the number of CBAM certificates required in case CBAM would cover this sector.

How to address the issue?

- **Carbon leakage measures for small installations (ETS2):** Following the first reporting exercise (reports due by 30 April 2026 for emissions released in 2025), a better picture of the sectors in which small installations operate will be formed, and the extent to which this includes installations at risk of carbon leakage (according to the carbon leakage list). If this is the case, consideration should be given to establishing carbon leakage measures for small EU installations equivalent to those applicable to larger installations in the same sector, channeling part of the auction revenues to small installations that might be found at risk of carbon leakage, and examining the option of covering small industrial installations under ETS1.
- **Emissions coverage and MRV updates:** Assuming that waste incineration and agricultural goods are to be included under the EU ETS and potentially CBAM due to the risk of carbon leakage, the following amendments and additions to the CBAM MRV system are needed:
 - **Waste incineration (ETS1 extension):** To ensure consistency between the ETS and CBAM should waste incineration be included in the EU ETS, some CBAM provisions may need to be adjusted:
 - Imports of goods: Recognize emissions from waste incineration in the calculation of embedded emissions for imports of CBAM-covered goods produced with waste-to-energy heat and electricity (in case of Scope 2 coverage by CBAM).
 - Imports of electricity: Treat imports to the EU of electricity generated by waste incineration as non-carbon free.
 - **Agriculture (Agri ETS, inclusion of agriculture into ETS1, linking system):** As emissions for agricultural products are not as directly measurable as for industrial goods with defined production processes, the Commission should develop a new methodology for the calculation of embedded emissions in agricultural goods under CBAM. This approach will need to accurately account for emissions from agricultural goods, despite their high variability and uncertainty, to ensure a level playing field for European producers relative to international competitors and enable appropriate compensation mechanisms.

Discussion of options

- **Carbon leakage measures for small installations (ETS2):** This is something to be considered after a first stock take of the type of small installations covered by ETS2 and the sectors they belong to, that will allow an assessment of how material the risk of carbon leakage is.
- **Emission coverage and MRV updates:** New considerations to adapt the CBAM MRV for waste incineration and agricultural goods will be necessary, but more straightforward for waste incineration with clear processing routes compared to more complex agricultural goods.

³¹ European Environmental Bureau. (2024). 'Reducing Emissions from Agriculture'. <https://eeb.org/wp-content/uploads/2024/10/Agri-ETS-Position-Paper.pdf>

6.1.2. Inclusion of CDR as a compliance instrument

What is the issue?

By 31 July 2026, the European Commission is required under Article 30a of the revised EU ETS Directive to present a report assessing the feasibility, modalities, and risks of incorporating CDRs into the EU ETS. The potential inclusion of CDRs as a compliance instrument in the EU ETS introduces significant uncertainty for CBAM, which revolves around three points:

- How will CBAM treat CDRs that are already embedded in imported products (e.g., cement produced with biogenic CO₂ that is permanently mineralized)?
- How will CBAM recognize removal certificates or negative emissions units issued under third-country cap-and-trade systems?
- Will the methodology for calculating the “embedded emissions” of imported goods remain purely product-based (actual product emissions), or will it evolve to incorporate life cycle or net-negative accounting when robust removal evidence exists? The CBAM implementing act on emission calculation methodologies is still pending and expected to be adopted in December 2025.

Why is that an issue?

The current legal framework already reveals asymmetries that will be magnified once CDRs enter the EU ETS:

- Under the EU ETS Directive, CO₂ that is permanently chemically bound in products (e.g., in certain mineralization processes or construction materials) is considered “not emitted” and is therefore exempt from surrender obligations. This creates a *de facto* recognition of certain product-embedded removals for EU producers.
- CBAM, however, calculates embedded emissions exclusively on the basis of actual emissions released during production. It contains no provision for deducting embedded removals, even when the same process would be exempt under the EU ETS for domestic producers. While the CBAM framework is designed to provide a parallel treatment for ETS rules, and future ETS-CBAM alignment on permanent CCU is widely expected (also to avoid WTO challenges), the current implementing acts and guidance do not yet provide for the deduction of permanently bound CO₂ – this is likely to be more of an oversight rather than a conscious decision.
- Failing to incorporate CDR into the CBAM design would lead to two major detrimental outcomes:
 - **Higher costs for EU importers:** If CDR is not deducted from the embedded emissions value, EU importers will be required to purchase a higher number of CBAM certificates. This will directly translate into higher production costs for these importers, crippling down their value chains.
 - **Risk of WTO challenge:** A policy inconsistency where CDR is recognized in the EU (within the EU ETS) for domestic producers but is simultaneously ignored (within CBAM) for non-EU suppliers would be legally interpreted as a violation of the National Treatment principle (GATT Article III), resulting in unjustifiable discrimination against imports.
- The complexities surrounding the future recognition of foreign CDR units in the EU ETS should likewise be applied to, and taken into account for, the integration of CDR into the CBAM. These considerations should be mirrored in the CBAM framework:

- If the EU ETS allows CDR certificates as compliance units (either by increasing the effective cap or by swapping them for EUAs), importers will need clarity on whether equivalent foreign CDR units can offset the CBAM obligation.
- Different third countries are developing highly heterogeneous CDR frameworks. Differences in permanence periods, leakage risk accounting, MRV rigor, additionality rules, and interaction with emissions caps make equivalence assessments extremely complex.

How to address the issue?

- Cap increase: CDRs issued on top of existing EUA cap: CDR operators receive new removal allowances (or certificates) that can be surrendered like EUAs. Total compliance units increase by the volume of certified removals (no upper quantitative limit or with a justified sub-cap). The effective cap is relaxed proportionally to verified CDR supply.
- One-for-one swap: CDR allowances replace EUAs: For every ton of certified CDR, one EUA is withdrawn (or not auctioned). Total compliance units remain constant. The cap remains unchanged.
- “Pre-emptive cap tightening” - cap reduced in anticipation of future CDR supply: The annual EUA cap is reduced ex-ante based on expected CDR volumes. The cap is tighter than the baseline.

Discussion of Options

Option 1 (cap increase) is the preferred route for the following reasons:

- It treats emission reductions and carbon removals symmetrically: both contribute to the same goal (reducing atmospheric CO₂ concentration) and should therefore be rewarded through the same compliance market.
- It provides the strongest possible demand-pull signal for CDR scaling, which is critical given that the EU will need tens to hundreds of millions of tons of durable removals per year post-2035 to meet net-negative targets.
- It avoids artificial separation of emissions abatement and removal incentives, letting the market continuously choose the lowest-cost pathway.
- It enables the simplest and most non-discriminatory treatment under CBAM. A ton of verified permanent removal (whether achieved inside the EU or in a third country) has the same atmospheric benefit and can therefore be credited on equal terms when calculating the CBAM obligation.

Consistently with option 1 as the integration model, the following adjustments to CBAM may be implemented:

- Full recognition of verified permanent removals (embedded or via certificates)
 - Importers may deduct verified permanent removals from the embedded emissions calculation on a 1:1 basis, irrespective of whether the removal is physically embedded in the product (e.g., mineralized CO₂ in cement) or achieved separately and documented through certificates linked to the production installation. This mirrors exactly the treatment of domestic producers under the expanded EU ETS.
- Single EU CDR quality threshold as the benchmark for equivalence
 - CRCF defines Q.U.A.L.I.T.Y criteria (Quantification, Additionality, Long-term storage, Sustainability). Any third-country removal unit that meets or exceeds these criteria (independently verified) is automatically eligible for CBAM deduction or surrender.
 - Operational mechanism

- Importers can either: (a) provide evidence of embedded permanent removals (deducted directly from declared embedded emissions), or (b) surrender approved third-country CDR certificates to the CBAM registry in the same way EU installations will surrender CDR units under the ETS.

6.1.3. Inclusion of international credits

What is the issue?

- International credits are being considered as part of the 2040 climate target and potentially for inclusion in the EU ETS. If the ETS recognizes international credits in the EU ETS, this raises questions for CBAM.
- There are currently a number of provisions that address international credits in the 2040 climate target:
 - The EU Commission proposal sees international credits playing a constrained role, limited to 3% of 1990 EU net emissions to be counted towards the 2040 target, available only after 2036, and explicitly excluded from use for compliance within the EU ETS.
 - The Conclusions of the Environment Council on 5 November 2025³² (Council General Approach) propose a 5 % share of international credits to reach EU's 2040 climate target and the Addendum to those Conclusions agreed on 10 November 2025 highlight that international credits shall play a role for compliance in the EU ETS.³³

Why is that an issue?

- Prices paid in third jurisdictions ("effective price") that will be recognized and deducted from the CBAM price has not yet been defined, it is part of the pending CBAM implementing acts that will come out in Q1 2026. If the ETS includes international credits in the ETS, importers will demand equal/parallel treatment under CBAM, and this will need to be provided for in the implementing act.

How to address the issue?

- Addressing this issue will depend on the final design of the ETS, and how international credits are treated within the EU. Clarity for how CBAM will consider foreign markets with international credits and imported goods that benefited from international credits needs to be provided at the earliest possible time, as this will have financial implications for importers.

Discussion of options

- There are not too many options to be considered, as parallel treatment of international credits is a must if the EU desire to stay true to the WTO is to be taken seriously.
- However, translating the principle of parallel treatment into fine quantitative and qualitative requirements will prove a tough nut to crack: the EU cannot define the rules of another ETS to this degree and expect not to run into challenges under the Paris Agreement.

³² <https://data.consilium.europa.eu/doc/document/ST-14960-2025-INIT/en/pdf>

³³ <https://data.consilium.europa.eu/doc/document/ST-14960-2025-COR-1/en/pdf>

6.1.4. EU ETS linkage with other ETSs

What is the issue?

- There is a prospect of potential EU ETS linkages to other ETS in the future, such as UK–EU linkage. It is an issue, but the list of potential linkages is not that long in reality, given the political realities and time available.

Why is that an issue?

- New ETS linkages increases the risk of transshipment, whereby covered goods enter the EU indirectly via exempted countries by onward export or displace goods in the exempted country that are then sold to EU.

How to address the issue?

- Address by strong rules of origin. If the good is substantially transformed in the country with a linked ETS, then OK. But if not, then it still must face a CBAM charge for the portion that originates elsewhere.
- Reinforce monitoring and inspection of shipments from linked countries. Ensure tracking of the goods throughout their transit and understand the origin of the goods and the product's ultimate destination within the EU. This would enforce stronger rules of origin, to avoid the risk of transshipment.
- Part of the negotiations in linking the EU ETS will have to include provisions on BCAs for countries with whom the EU links, including fairly granular discussions on the architecture of such a BCAs.

Discussion of options

- The inclusion of BCA in negotiations for linkages with countries that have no border control is an obvious must. This would avoid the risk of transshipment. However, not every country has the political or economic incentive or intention to put its own BCA, as it strongly depends on how high their internal carbon prices are. In addition, developing and implementing a BCA takes time.
- Reinforcing monitoring, inspections and tracking of goods requires an extensive monitoring and reporting system, but it would significantly reduce the risk of transshipment. To enforce this EU-wide would be costly. Moreover, strong rules of origin are already implemented under free trade agreements.

6.1.5. MSR Review

What is the issue?

- The upcoming review of the Market Stability Reserve (MSR) might lead to an indirect issue on the interaction between the ETS and CBAM. The invalidation rule currently dictates that allowances held in the MSR above a certain threshold are permanently cancelled, effectively constraining the long-term supply of EUAs. Maintaining or strengthening this rule would decrease the number of allowances available in the system.

Why is that an issue?

- Less long-term liquidity in the EU ETS would impact importers' ability to hedge their CBAM costs.
- Hedging might not that be an impactful issue on market functioning.
- Importers using EU ETS futures as a proxy to manage expected CBAM costs would face increased hedging inefficiency, with a potential rise in volatility.

How to address the issue?

- Integrate the MSR review outcomes into broader ETS–CBAM coordination and upcoming reviews necessary in order to ensure that changes in allowance supply management do not undermine hedging efficiency or the comparability of carbon prices across the two systems.

Discussion of options

- The analysis undertaken so far has not highlighted this as a fundamental issue, but rather one that we should be mindful of.

6.1.6. Slower phase-out pathway of free allocation

What is the issue?

- In its proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality of November 5, 2025, the Council of the EU states that the European Commission should timely consider a slower phase-out pathway for free allocation of allowances from 2028 onwards, including through the Industrial Decarbonization Bank and a review of the Market Stability Reserve³⁴.
- Will this have an impact on EU ETS and CBAM.

Why is that an issue?

- Given the concerns regarding competitiveness of EU industry there is a strong probability that this issue will get some traction in trilogues.
- Should a slowdown of the phase out of free allocation be introduced, how does this impact the EU ETS/CBAM complex?
- Unpredictability over the future developments on the phase out of free allocation creates greater uncertainty for industry and hinders the ability of industry to be effectively prepared and plan impacts investments.
- It is currently unclear which methodology the Commission will be relying on to slow down the phase-out of free allocation.

How to address the issue?

This decision introduces further uncertainties on the future development of the EU ETS/CBAM policy framework and expands the scenarios of the Commission's impact assessment of possible changes to carbon leakage measures. The change/slow-down of the reduction of free allocation could be done in several ways:

³⁴ See p.10 in <https://data.consilium.europa.eu/doc/document/ST-14960-2025-INIT/en/pdf>

- **A change in the Linear Reduction Factor (LRF):** the LRF is set to be at 4.3% up to 2028 and 4.4% from 2028 onwards. A reduction of this percentage would mean a slower decrease of the cap and consequently of free allocation.
- **A change in the free allocation percentage of the cap:** changing this rate would impact the total number of free allocation of allowances on the market.
- **The preliminary free allocation formula could also be modified** to achieve this goal. Considering the four multipliers, where the HAL cannot be modified, and CLEF for Carbon-leakage sectors is already set to be 100%, already providing the highest amount of free allocation possible, the only multipliers of the free allocation formula that could be modified are the CBAM factor and the benchmarks.

$$F_{i,k} = BM_i \times HAL_i \times CLEF_{i,k} \times CBAM_{i,k}$$

Where:

| | |
|--------------|---|
| $F_{i,k}$ | Annual preliminary allocation for sub-installation i in year k (allowances per year); |
| BM_i | Applicable benchmark value (allowances per unit of activity ²⁴); |
| HAL_i | Sub-installation's Historic Activity level (unit of activity per year); |
| $CLEF_{i,k}$ | Applicable Carbon Leakage Exposure Factor (unit-less); |
| $CBAM_{i,k}$ | Carbon Border Adjustment Mechanism factor (unit-less). |

Source: Guidance Document n°2 on the harmonized free allocation methodology for the EU ETS - Guidance on determining the allocation at installation level - 2024 revision - DG CLIMA, 26 February 2024.

- Purely for the sake of completeness, a further option that could be explored is a change in the Cross Sectorial Correction Factor (CSCF) mechanism. Based on recent internal and external analysis, it is unlikely that the CSCF would be triggered in the next years. However, changing the mechanism with which the CSCF is implemented should also decrease the phase-out pace of free allocation, if made harder to be triggered.

Discussion of options

- **A change in the LRF:** this option would lead to a general reduction in slowing down free allocation while not modifying the percentage of allowances given for free. This could be beneficial because modifying the LRF would not only increase the total number of free allowances, but also the total number of allowances auctioned, generating a larger revenue.
- **A change in the free allocation percentage of cap:** This option would assure a further reduction in free allocation phase out by changing the rate of free allocation in the cap. This would lead to a change in ETS market dynamics as less allowances would be sold through auctions. In addition, it could also lead to a reduction in the revenue for Member States.
- **A change in the CBAM factor:** this option would ensure a slower phase-out of free allocation due to a change in the CBAM factor. CBAM factor is planned to gradually reach 0% by 2034, and a slower phase out of it would mean ensuring a higher number of allowances given for free. . However, less allowances would be sold through auctions, leading to a reduction in the revenue for Member States.

- **A change in the benchmark:** changing the benchmark, meaning reducing it less strictly, would mean having a larger amount of free allocation.
However, as with a change in the CBAM factor, less allowances would be sold through auctions, leading to a reduction in the revenue for Member States. Furthermore, it is bureaucratically complex.
- **A change in the CSCF mechanism:** as previously mentioned, it is unlikely that the CSCF will be triggered until mid-2030s. It is however important to also explore this option. A change in the CSCF mechanism could slow down the phase out of free allocation in 2 ways. One alternative would be to have stricter implementation rules, by increasing the free allocation buffer. A higher buffer would mean that a higher amount of allowances (currently set at 3%) could be moved to from the auction share to the free allocation if needed, granting more flexibility to Member States to get free allowances. Furthermore, it would also be possible to exclude a larger percentage of industries from the CSCF. Current legislation reads that the top 10% best performing installations in Europe are not included in the cut in case the CSCF gets implemented. By increasing this percentage, it would be assured that a lower number of free allowances would be cut. However, a change in the CSCF mechanism seems to be a more remote way forward.

6.2. CBAM developments

6.2.1. Expansion of CBAM scope to new sectors

What is the issue?

- **Uncertainty over phase-out of free allocation for horizontal expansion:** Recital paragraph 67 of the CBAM Regulation anticipates expanding the mechanism by 2030 to cover all EU ETS sectors, especially goods at high risk of carbon leakage and downstream products containing significant amounts of covered goods. Article 30 of the CBAM Regulation requires the Commission to assess potential scope extensions. Under Article 30(2), it must report to the European Parliament and the Council before the end of the transitional period on whether to include, among other things, additional goods at risk of carbon leakage, specifically organic chemicals and polymers. Under Article 30(6), the Commission is also mandated to periodically present a report containing (among other things) an assessment of the scope before 1 January 2028 and every 2 years thereafter.

Why is that an issue?

- **High uncertainty for future compliance:** While CBAM may expand to products in new sectors, it remains unclear how their phase-out from free allocation will be managed, i.e. at what level CBAM factor level the new sectors would enter. While the phase-out schedule for free allocation in sectors at risk of carbon leakage but outside the CBAM is already relatively uncertain³⁵ bringing these sectors into the CBAM would alter this trajectory and the Commission has not yet released the new timeline.

³⁵ (a) ETS benchmarks reduction will happen in 2026, but the official new benchmarks are not published yet, (b) it is unclear whether and when the CSCF will apply, (c) the CLEF will not decline before 2030 and must fall to zero by 2039, yet the trajectory remains undefined. The ETS revision proposal expected in Q3 2026 should clarify these elements. For CLEF figures, see https://climate.ec.europa.eu/document/download/a4c0cb40-35f9-4705-882d-b55382d03e9a_en?filename=2_gd2_allocation_methodologies_en.pdf

The lack of clarity regarding the CBAM factor trajectory for the inclusion of new sectors under CBAM creates significant uncertainty for their importers. This ambiguity makes it difficult for businesses dealing with products like organic chemicals, polymers, refined products and glass to make informed investment and sourcing decisions.

How to address the issue?

- **Need for a clear phase-out schedule:** The Commission must publish a clear phase-out schedule upfront so companies can plan investment and compliance strategies. Different options exist for the phase-out trajectory.
 - **Option 1 - Immediate alignment ("catch-up"):** The new sectors would immediately adopt the same CBAM factor percentage that Annex I goods are at when the expansion occurs. For example, if new goods enter CBAM in 2030, they would also immediately start at 51.5%, and follow the same pace until the CBAM goods with a full phase-out in 2034.
 - **Option 2 - Delayed start, same pace:** The new sectors would begin their phase-out at first CBAM factor (e.g., the starting 97.5% value for the CBAM goods) in let's say 2030 and then follow the same annual reduction pace as the CBAM goods schedule until they reach 0% (i.e., in 2038 in the case of inclusion in 2030).
 - **Option 3: Linear phase-out to 2039:** The trajectory would be defined as new linear reduction decreasing equally each from the year of entrance into CBAM to reach 0% by 2039.

Discussion of options

- Option 1 offers regulatory simplicity but creates an abrupt and strong carbon cost hit; for example, jumping directly to a 51.5% CBAM factor in 2030 would immediately cut free allocation by more than half. This sudden cost shock could lead to significant market disruption.
- Both Option 2 and Option 3 provide a much more gradual transition by starting the phase-out at a higher allocation level, minimizing the initial impact. Of these, Option 3 offers the highest degree of long-term planning certainty due to its simple, fixed, linear reduction path to 0% by 2039.
- Ultimately, the Commission must publish a clear schedule that prioritizes a manageable transition pace (like Options 2 or 3) to mitigate business uncertainty while still effectively applying the carbon price signal.

6.2.2. Extension of CBAM to downstream sectors

What is the issue?

- The CBAM covers a set of basic materials sectors, with coverage extending to some extent down the value chain. However, some of the covered sectors (aluminum, steel) have complex downstream value chains in which trading is dominated by semi-finished or even finished products, not all of which are included in the list of covered goods (Annex I of the CBAM Regulation). The 2026 review of the sectors covered, and of the downstream coverage within those sectors, is likely to expand the list of covered downstream goods.

Why is that an issue?

- The knock-on effects in the value chain of a CBAM applied only upstream can be considerable. The application a CBAM only upstream would lead to higher costs for downstream producers, either incentivizing the relocation of that production outside Europe, or increasing imports of products at the

next step in the value chain³⁶. For instance, in the current CBAM scope primary aluminum (7601) is covered but aluminum road wheels (CN code 8708) are not. Road wheel producers – that produce a product not currently in scope - in the EU might move production out of Europe, or European original equipment manufacturers (OEMs) would source finished aluminum road wheels from abroad.

- What is more, a CBAM only upstream would disregard a sizeable part of emissions embedded in imports of certain semi-finished or finished products outside HS chapter 76. For example, a CBAM only on unwrought (primary) aluminum and semi-finished products one step down the value chain would disregard a sizeable part of direct emissions embedded in imports of aluminum components or products of mixed material composition.
- Effectively, the application of CBAM to primary only materials or with a narrow product scope, would merely shift the risk of carbon leakage downstream in the value chain. This is expected to be felt in particular by those sectors producing semi-finished products that contain a high share of the primary material, and the processing results in limited value-added. Those downstream sectors would be protected by a CBAM levied on imports of like downstream products.

How to address the issue?

Expanding the list of goods covered by CBAM (Annex I of the CBAM Regulation) to encompass greater downstream coverage and allowing CBAM to cover embodied carbon in covered input goods, would directly address the risk of shifting carbon leakage downstream in the value chain.

The question then becomes, when reviewing the CBAM, how far downstream in the value chain to go in terms of product coverage. There are different broad options in terms of the extent of coverage:

- **Go all the way down the value chain** to consumer goods. This would include products as complex as cars, that typically include more than one CBAM-covered materials of different grades supplied by different suppliers.
 - To address the technical and administrative complexities associated with such a comprehensive coverage, the use of default values with respect to the percentage mass content of CBAM-materials in complex goods could be envisaged, at least in the short run.
 - At the same time, efforts should be put into making carbon emissions accounting a standard practice, which in the long run allow a more accurate and comprehensive downstream coverage.
- **Find a “sweet spot” of downstream coverage:** this would entail covering some additional but not all semi-finished and finished products. A set of considerations would need to be used in determining the optimal spot including: 1) that the risk of carbon leakage decreases once one goes further downstream in the value chain, at a point where the carbon costs borne by products diminishes in proportion to their total value, and as goods begin to compete on more than simply price³⁷; 2) ensuring an instrument that is not technically and administratively over-complex.
- It should also be clarified that expansion of CBAM downstream to cover more complex goods that incorporate not only materials of Annex I of the CBAM Regulation but also non CBAM-covered materials, would by no means mean an inclusion of these other commodities/materials into Annex I of the CBAM Regulation. Rather downstream expansion would be done through including the part

³⁶ P. 50, ERCST (2021), Border Carbon Adjustments in the EU: Sectoral deep dive, March 2021

³⁷ p. 14, ERCST (2021), CBAM for the EU: A Policy Proposal, April 2021, <https://ercst.org/border-carbon-adjustments-in-the-eu-a-policy-proposal/>

made with CBAM-covered materials (from Annex I of the CBAM Regulation 2023/956) in the calculation of embedded emissions, and importers surrendering a corresponding number of CBAM certificates.

- **Other options outside the CBAM/EU ETS framework**, like low-carbon criteria for the purchase by governments of products down the value chain or product standards for downstream products can address the risk of shifting carbon leakage downstream in the value chain, as they set direct requirements for both imported and domestically produced products.

Discussion of options

- While the option of complementary measures to the EU ETS/CBAM, like product standards and green public procurement are welcome, as they may also indirectly promote a convergence towards adopting low-carbon production processes globally and driving down their costs, their feasibility might be somewhat compromised by the large number of downstream products for which standards would need to be developed or updated, and the mere fact that public procurement only represents a fraction of total demand for such products. What is more, complementary measures like standards do not address the risk of carbon leakage with respect to exports of downstream products, unless they are developed and implemented internationally.
- Expanding the list of goods covered by CBAM to encompass greater downstream coverage would directly address the risk of shifting carbon leakage downstream in the value chain. Covering downstream products up to the “sweet” spot would entail a CBAM technically and administratively less complex compared to the case of going all the way down the value chain and would minimize political or diplomatic controversy faced by CBAM, as well as associated legal challenges. Similar to the case of Scope 2 emissions coverage, in many cases downstream producers are not covered by the EU ETS so symmetry between EU ETS and CBAM could become a tricky principle in a WTO setting, as arguing for symmetry with pass-through carbon costs down the value chain from the EU ETS would be highly debated in terms of extent and incidence. However, there is still complexity in determining the sweet spot for all the value chains involved (and the dynamic character of such assessment, as commodity prices and carbon prices continue to evolve).

6.2.3. Expansion of CBAM to Scope 2 emissions

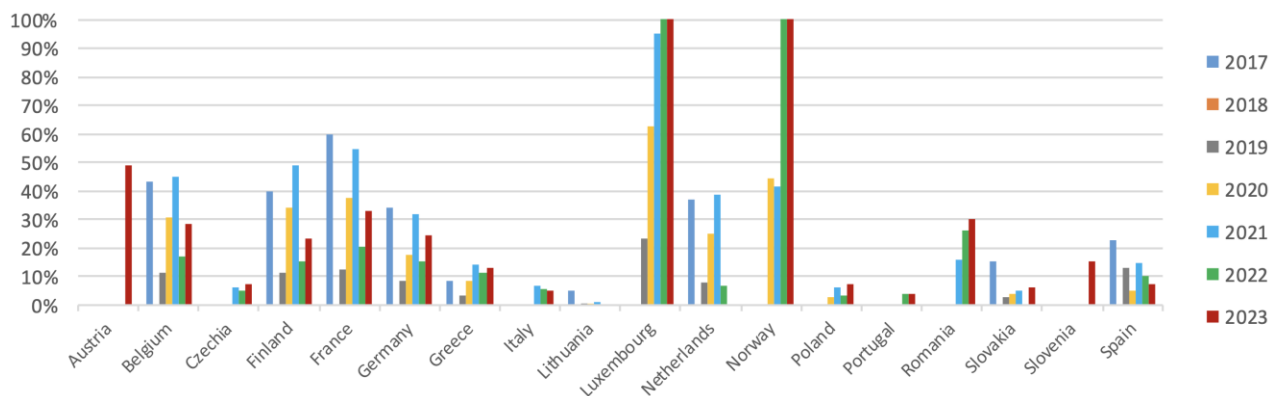
What is the issue?

- The CBAM currently covers Scope 2 indirect emissions only for products in two sectors (fertilizers and cement), however it is the regulators intention to include indirect emissions for additional if not all CBAM-covered sectors. This would presumably see the discontinuation of the indirect cost compensation mechanism that several Member States apply to compensate firms for indirect carbon costs associated with electricity consumption³⁸ Total indirect cost compensation disbursed by Member States from 2017-2023 amounted to €11.5 billion (€13.2 billion including Norway), of which €3.9 billion was in 2023 alone (€4.5 billion including Norway)³⁹. The following figure shows the percentage (%) of EU ETS auction revenues spent on indirect costs in the EU and Norway.

³⁸ According to Recital 12 of the CBAM regulation (Regulation (EU) 2023/956), “The CBAM seeks to replace those existing mechanisms [of free allocation and indirect cost compensation] by addressing the risk of carbon leakage in a different way, namely by ensuring equivalent carbon pricing for imports and domestic products”.

³⁹ p.29, ERCST (2025). 2025 State of the EU ETS Report, May 2025, <https://ercst.org/2025-state-of-the-eu-ets-report/>

Figure 5: Percentage of auction revenues spent on indirect cost EU27 (2017-2023)



Source: p.29, ERCST (2025). 2025 State of the EU ETS Report, May 2025, <https://ercst.org/2025-state-of-the-eu-ets-report/>

Why is that an issue?

- As discussed in Section 5.1.3, indirect emissions is where there is a broad range and differentiation between grids exists., Therefore, with the inclusion of indirect emissions much of the “resource shuffling” risk emerges in sectors that are electricity-intensive, such as aluminum.
- The scope expansion of CBAM to cover Scope 2 indirect emissions is challenging for EU competitiveness, as:
 - The possible discontinuation of indirect cost compensation (in addition to the phase-out of free allocation) would significantly increase carbon costs for EU producers, leading to higher prices of products and in particular for sectors characterized by high electricity intensities (e.g. aluminum, ferro-alloys). This will negatively impact the competitiveness of EU producers.
 - Indirect carbon costs in the EU accrue as a price effect in the European electricity market and are not directly related to the indirect emissions associated with production⁴⁰, which are what a CBAM covering indirect emissions would target. While this shift is expected to alter the competitive landscape, potentially favoring producers in countries with cleaner electricity mixes, EU producers, including those with low Scope 2 carbon intensities, may still face a disadvantage due to the pass-through of carbon costs in electricity prices.
 - As electricity decarbonizes towards 2040, the relevance of indirect carbon costs may decline, but near- to mid-term competitiveness impacts, particularly for electricity-intensive industries, may persist, as fossil generation will continue to be on the margin for the foreseeable future.
 - In addition, the decarbonization pathway of several currently non-electricity intensive industries might be tied to their electrification to a certain degree, and the decoupling of indirect carbon costs from actual emissions might put into question their speed of electrification.

⁴⁰ In the EU, there is a mismatch between indirect carbon emissions and their associated costs because the indirect carbon costs follow the marginal power producer's carbon intensity, not the total average emissions of all producers. The indirect carbon costs are thus decoupled from actual emissions, since the electricity price is set by the marginal power plant, which is usually a fossil fuel plant. Consequently, electricity costs in the sector include the cost of carbon even in countries with a large share of emission-free power production.

How to address the issue?

- Pause any plans to cover Scope 2 indirect emissions for additional sectors under the CBAM.
- Include Scope 2 indirect emissions in the CBAM for all sectors, phase out the indirect cost compensation and ensure that the electricity market design has tools allowing consumer exposure to average system costs and not necessarily marginal costs.
- Include Scope 2 indirect emissions in the CBAM for all sectors, and reform the indirect cost compensation such that it compensates EU producers for the discrepancy between the total passed-through carbon costs in electricity prices and producers' Scope 2 emissions multiplied by the carbon price. This reform would ideally also entail the creation of a single, EU-wide system for indirect cost compensation, rather than the current situation where some MSs compensate for indirect carbon costs in their own terms with resulting indirect cost compensation practices varying across MSs and sectors. This would ensure consistent treatment across the bloc and separate the issue of indirect costs from CBAM itself.

Discussion of options

- Pausing plans to expand CBAM coverage to indirect emissions would eliminate the issues outlined above (the competitiveness disadvantage that their coverage in interaction with the EU's electricity market design would bring about for EU producers). It would also largely address the challenge of resource shuffling (see Section 5.1.3). Coverage of direct emissions only affords less legal risk, as it is in line with the objective of having the CBAM closely mirror the ETS, while forcing importers to buy allowances for indirect emissions for which domestic producers do not have to directly buy allowances (albeit pay for indirectly through the carbon costs passed through to them) could be construed as a form of discrimination against foreign producers in a WTO legal setting. Moreover, this option means a CBAM that is much simpler to administer for both public and private entities. On the negative side, this option provides no incentives to reduce indirect emissions which, for many basic materials, are the most significant part of overall emissions.
- Thus, the coverage of Scope 2 indirect emissions is desirable, provided that this is done in a fair way that does not lead to competitiveness disadvantages for certain producers. Ensuring that foreign and EU producers face equivalent carbon costs for the Scope 2 emissions can be achieved in different ways. Given that the origin of the issue lies not in EU ETS/CBAM framework itself but in how this framework interacts with electricity markets in the EU, one option would be to examine the relationship with the electricity market design. However, the current marginal pricing model is generally accepted as best suited for a liberalized electricity markets (as it provides efficiency, transparency and incentives to decarbonize electricity generation), while this option would also be politically more difficult.
- The final option of including Scope 2 indirect emissions in the CBAM for all sectors, and reform the indirect cost compensation mechanism such that it compensates EU producers for the discrepancy between the total passed-through carbon costs and producers' Scope 2 emissions, is politically more feasible than the option of re-examining the electricity market design. However, it must be highlighted that from an economic point of view, the average carbon intensity of the European grid continues to decline, but not that of the marginal producer (fossil fuel generation at the margin), and thus- the costs of indirect cost compensation under this option could mushroom, both because of the growing discrepancy and the expansion to all Member States.

- It is worth noting that both of the last two options involving reforms would take time, and so an approach whereby coverage of Scope 2 under CBAM is paused in the short-term but not indefinitely, while in the interim working on either of the two reforms seems reasonable.

6.2.4. Scrap treatment

What is the issue?

- Given that the use of scrap material can amount to significant amount of the material use in some industries, especially aluminum and steel, the treatment of scrap under CBAM is an important issue.
- ***Why is that an issue?***
- Scrap under the EU ETS is considered as a zero-emission product to avoid double counting. Similarly, CBAM does not currently cover scrap, be it pre- or post-consumer scrap, essentially treating it as “carbon free”.
- Although this issue concerns a subset of currently CBAM-covered sectors (e.g. aluminum, steel), it is important for the mechanism’s effectiveness.
- In the EU, the removal of free allocation for primary aluminum as the CBAM is phased in, will lead to an increase not only in primary but also scrap prices. This is because, the price for scrap in the EU, will encompass carbon costs equivalent to those associated with unwrought aluminum, as scrap prices follow closely the price of primary aluminum for which they are substitutes (process scrap is perfect substitute for primary aluminum). On the other hand, non-EU producers will not incur carbon costs when exporting scrap, or products made of scrap. This creates an unlevel playing field, whereby EU producers will face a competitive disadvantage vis-à-vis foreign producers.
 - For the case of post-consumer scrap in the EU, this means that although the emissions in the primary aluminum it is derived from have already been reported and accounted for in previous loops and in that sense there is no carbon embedded in this type of scrap (other than the carbon involved in remelting), the carbon cost is still embedded in its price.
- With scrap attributed zero emissions, importers might have an incentive to exaggerate the scrap content of imported products to avoid CBAM charges (circumvention).
- Moreover, foreign producers can choose to only export products made from scrap to the EU to avoid charges, while using primary materials for other markets (resource shuffling).

How to address the issue?

- Include pre-consumer (process) scrap in the CBAM and continue to treat post-consumer scrap as “carbon free”: This would entail attributing to pre-consumer scrap the same carbon emissions as for primary aluminum for the calculation of embedded emissions of value-added (complex CBAM) goods (partly) made of scrap. It could also potentially entail adding process scrap as a CBAM good (Annex I of the CBAM Regulation); however the current scrap CN code would have to be modified/split to distinguish between process and post-consumer scrap.
- Including both pre- and post-consumer scrap in the CBAM scope through assigning aluminum scrap the same embedded emissions as primary aluminum, through country-specific default emissions values that reflect country average emissions of primary aluminum production.

- In the short term, treat all scrap (or at minimum process scrap) as primary aluminum to immediately close the loophole. In the long term, move toward national mass-balance approaches that reflect actual scrap use.

Discussion of options

- Include pre-consumer (process) scrap in the CBAM and treat post-consumer scrap as “carbon free”:
 - Pros: Incentivizes circularity, through incentivizing the use and import of post-consumer scrap-based products from third countries. Straightforward with respect to embedded emissions calculation. WTO compatible.
 - Cons: Would require better tracing of scrap content and types (pre- versus post-consumer) in the global aluminum value chain. Does not address risk of circumvention via exaggerating post-consumer scrap use rates of imported products.
- Include pre- and post-consumer scrap in CBAM through assigning aluminum scrap the same embedded emissions as country average emissions of primary aluminum production:
 - Pros: Ensures carbon cost mirroring between EU/non-EU producers, and prevents circumvention risk (reduces exaggerated scrap claims) and resource shuffling. It is also administratively simple.
 - Cons: Undermines circularity / disincentivizes the use of scrap by non-EU producers; Solution reliance on default values that in general remove incentives at the firm level to improve carbon-intensity and reward those that are more carbon-intense than the default level; Risks double counting (especially post-consumer); Could be construed to conflict with EU ETS parallel treatment/legally vulnerable regarding WTO compliance.
- Short-term: scrap = primary; Long-term: national mass-balance
 - Pros: Immediate loophole closure; mass-balance is accurate, technically sound solution.
 - Cons: Short-term inherits Option 2 problems; national mass-balance is complex to implement and verify and implies the use of and disadvantages of default values (see above).
- Overall, there is no clearly emerging solution to deal with the challenge of scrap.

7. Issues in the regulatory process

7.1. Institutional streamlining

What is the issue?

- **Institutional separation across EU bodies:** Currently CBAM and EU ETS are governed by different directorates in the EC – DG TAXUD and DG CLIMA respectively. Similarly, in the EP, different rapporteurs are appointed to follow the legislative process for the two files. In the Council of the EU, general approaches were reached separately, albeit following some coordination.

Why is that an issue?

- **Risks of fragmented policymaking:** This segmentation across the institutional legislative process outlines the need for increased coordination between these two policies. Such a fragmented policy approach risks producing an inconsistent legislative framework that undermines the effectiveness of CBAM and EU ETS.

How to address the issue?

- **Establish coordinated Commission structures:** Create a joint DG TAXUD–DG CLIMA–DG ENER task force and an inter-service steering group within the Commission to ensure coherent legislative development, drafting, and implementation.
- **Promote coordinated decision-making:** Appoint joint rapporteurs in the European Parliament and hold joint Council working group sessions to prevent diverging policy outcomes.
- **Align timelines and do consistency check:** Synchronize legislative timelines, adopt a unified reporting and monitoring framework linking ETS and CBAM data, and introduce a formal “consistency check” mechanism to ensure both systems remain aligned over time. While Article 30 of the CBAM Regulation mandates periodic reviews and reports focused on ex-post evaluation and future scope adjustments, these mechanisms lack the real-time, inter-institutional consistency checking required during the policy’s legislative development and day-to-day implementation.

Discussion of options

- **Administrative task force solution:** Establishing a dedicated task force is the most direct way to resolve immediate technical and operational inconsistencies. Moreover, including DG ENER in the joint task force could help ensure a more accurate reflection of how electricity is produced and consumed, and support the development of an improved methodology for electricity. However, this is an administrative solution, not a legislative one. It lacks the permanence and formal authority to override the foundational disconnects in primary legislation.
- **Legislative alignment mechanism:** Appointing joint rapporteurs and holding joint Council sessions offers the strongest legal mechanism to treat CBAM and EU ETS as a unified file, ensuring consistency during all future amendments. The main drawback is the high risk of legislative paralysis, introducing significant procedural friction and delays.

Mandated consistency and data framework: Mandating a formal “consistency check” and a unified data framework could help resolve immediate inconsistencies and administrative burden. While the check itself is mandated, the critical risk is that the findings of inconsistency can be politically discounted.

