

Carbon leakage under CBAM and free allocation

Summary for Policymakers

Executive summary

A recent [study](#) conducted by the European Roundtable on Climate Change and Sustainable Transition ([ERCST](#)) and the Climate Economics Chair ([CEC](#)) examined the different roles that free allocation and the EU CBAM play in addressing carbon leakage.

The central question is simple: if the EU introduces CBAM and phases out free allocation, will that be enough to stop carbon leakage?

CBAM is an important tool to protect EU industry from carbon leakage. It helps ensure that imports face a carbon cost when they enter the EU market. This supports EU production and can encourage cleaner production both in Europe and abroad.

However, CBAM does not solve every problem. It protects the EU market from imports. It does not protect exports, complex value chains or downstream sectors that depend on basic materials such as steel and fertilisers.

This is why free allocation remains important during the transition. Free allowances help companies manage carbon costs, maintain profitability and keep investing in decarbonisation. Without enough free allocation, even efficient low-carbon EU producers may face rising costs that weaken their competitiveness.

The study shows that combining CBAM with a reasonable level of free allocation can deliver best results. It can support cleaner EU production, reduce import dependence and limit negative effects on downstream sectors.

For policymakers, the conclusion is clear: CBAM and free allocation should be seen as complementary tools. CBAM is necessary, but it should not be treated as a full replacement for free allocation until global carbon costs become more comparable.

Why this matters

EU industry faces some of the highest actual carbon costs in the world. Many non-EU competitors face lower costs because their carbon pricing systems use free allocation or similar relief measures. This creates an uneven playing field.

CBAM is designed to reduce this gap for imports into the EU market. But companies also compete in export markets and operate in long value chains. If EU carbon costs rise faster than the costs faced by global competitors, production and investment can still move outside Europe.

How CBAM and free allocation work differently

Tool	What it mainly does	Why it matters
CBAM	Ensures a level playing field between EU and non-EU producers by applying a carbon cost to covered imports.	Helps EU producers compete with imports that would otherwise avoid comparable carbon costs.
Free allocation	Reduces the real carbon cost borne by EU companies during the transition.	Helps preserve profitability, investment capacity and industrial activity in globally exposed sectors.

Main takeaway

CBAM and free allocation are not the same tool. CBAM mainly deals with imports. Free allocation helps EU companies manage actual costs and keep investing. This is why the study presents them as complementary during the transition.

What modelling shows

CEC developed an economic model to study the impact of CBAM and free allocation in the long run and across industrial value chains. Using steel and fertilizer value chains as case studies, the model captures carbon leakage across both upstream and downstream sectors:

- **Flat steel** (the upstream sector) & **automotive production** (the downstream sector) and
- **Ammonium nitrate (AN) fertilizers** (the upstream sector) & **staple grain** production (the downstream sector).

The core insights from the modelling exercise highlight the following critical points:

1. Primary Benefits of CBAM:

- Bolsters domestic manufacturing: It safeguards EU production within the regulated sectors.
- Mitigates external reliance: It successfully lowers dependency on imports for those goods.
- Incentivizes global decarbonization: It drives cleaner production methods both within Europe and abroad.

2. Challenges with CBAM in current configuration:

- Escalating carbon costs compress the profit margins of low-carbon EU producers of upstream goods:
 - The financial pressure from phasing out free allowances eventually offsets any initial advantages for low-carbon EU producers of upstream goods.
 - Conversely, maintaining free allowances enables low-carbon EU firms to prosper long-term by capturing market share from closing, highly emitting sites.
- Inflates costs for downstream manufacturers:
 - It displaces a portion of the competitiveness burden from primary producers to downstream industries.
 - This economic strain intensifies when free allocation of allowances is concurrently eliminated.

3. Impact of Pairing CBAM with free allocation:

- It eases the transition for the upstream sector as it tempers the inflationary impact on primary industrial goods production.
- It limits—though does not entirely neutralize—the adverse effects on downstream value chains.
- It achieves a similar or greater drop in average EU carbon intensity by allowing cleaner facilities to scale up.

The study's findings suggest that the immediate instinct of fully eliminating free allocation with the introduction of CBAM should be revisited.

What this means for EU policy

- **Keep CBAM strong.** It allows Europe to maintain its climate ambitions while ensuring a level playing field for EU industry, ensuring importers face similar carbon costs.
- **CBAM is not a standalone remedy. Maintain reasonable level of free allocations:** CBAM alone cannot shield export-dependent sectors or prevent value chain leakage, nor does it cushion actual operational costs during the transition.
- **CBAM and free allocation can be seen more as complements rather than substitutes** in addressing carbon leakage over the long run, as they operate through different economic channels. The CBAM Regulation establishes the coexistence of CBAM and free allocation under Article 31.
- **Removing free allocations too quickly is likely to create new risks**
Costs are expected to rise for EU producers and then move down the value chain e.g. to farmers, carmakers and other users of basic materials.
- **Use targeted support (e.g. free allowances) where needed.** Maintaining a reasonable level of free allocation could provide a better outcome with respect to preventing deindustrialization, keeping transition costs manageable, and avoiding carbon leakage. It can reduce pressure on companies and support investment in decarbonization while carbon costs remain uneven across major economies.

Key findings

1. The report recalls the “independence principle” logic

Under free allocation, abatement can generate revenue through the ability to sell allowances freed up by lower emissions (whereas under auctioning, it is an avoided expenditure). This matters because it can support decarbonization financing capacity and limit the cost transmitted to downstream sectors during the transition.

2. ETS price ≠ ETS cost and policy debates must focus on the cost.

The report stresses that visible EUA prices send a signal, but competitiveness and offshoring are driven by the carbon costs actually borne by firms, direct and indirect, and how these evolve as free allocation declines. Policy should aim for a strong price signal while keeping the effective price (cost) sustainable during the transition.

3. International reality check: most non-EU carbon pricing systems imply low carbon costs for industrial sectors.

The report documents that many systems rely heavily on free allocation or equivalent measures. As a result, industries in several countries face little to zero actual carbon costs.

By contrast, EU countries lead the way in terms of the highest ‘ETS visible prices’, and ‘incurred costs by covered entities’. This asymmetry is central to the EU competitiveness problem.

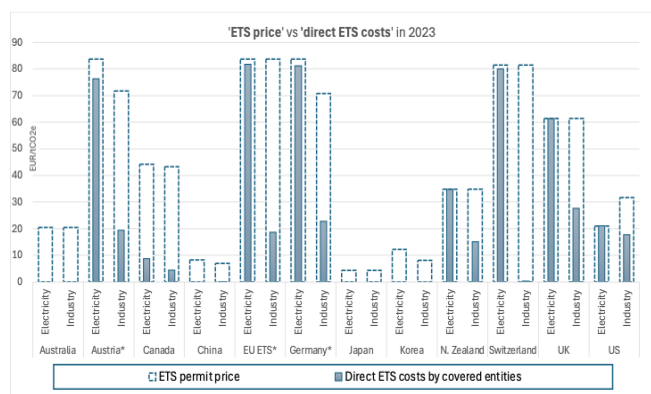


Figure 1 ‘ETS visible price; vs ‘ETS costs’ across jurisdictions
Source: ERCST, based on OECD (2025).

4. CBAM is necessary, but it is not sufficient to prevent carbon leakage on its own.

CBAM primarily addresses leakage linked to imports into the EU market, but the report explicitly notes that it does not fully replicate the broader leakage protection historically provided by free allocation, notably for exports and complex value chains. As free allocation is scaled down, these leakage dimensions are only partially addressed by CBAM, implying that additional or complementary measures may be required beyond “CBAM + full phase-out”.

5. A reasonable level of free allocation for industry protects channels that CBAM does not cover and stabilizes the transition.

The report explains that CBAM and free allocation operate through different economic channels: CBAM acts on marginal competitive conditions at the border, whereas free allocation affects profitability and balance-sheet constraints, which matter for survival and investment capacity in globally exposed industries. This is precisely why the report describes them as complements rather than substitutes.

6. Modelling results show that CBAM protects upstream activity, but without sufficient free allocation, the adjustment becomes more inflationary and more disruptive for downstream sectors.

6a) Upstream impact:

- The modelling shows that CBAM can support EU upstream production and reduce import dependence.
- It can also encourage cleaner production both inside and outside the EU.
- However, as free allocation is phased out, early gains for carbon-efficient EU firms upstream are eventually offset by the financial strain of losing free permits and rising carbon costs that erode their profitability.
- In contrast, maintaining free allocation helps efficient firms thrive long-term while gaining market share from closing inefficient sites.

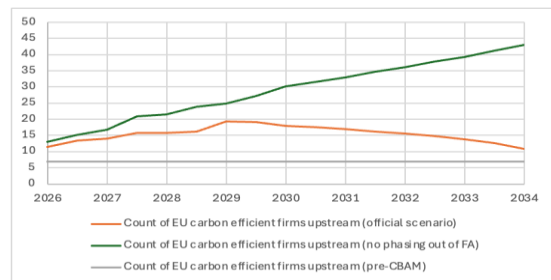


Figure 2 Number of carbon-efficient upstream sites in the EU

Units: count of flat steel operating sites

Legend: the number of efficient EU upstream sites increases sharply when CBAM is introduced, without phasing out free allocation. In the official scenario, the initial benefit is gradually offset, and the number of sites returns

6b) Downstream/value-chain leakage is a core risk:

- Higher upstream input prices erode downstream competitiveness, leading to lower downstream EU production and higher net imports of finished goods.
- In other words, the rising upstream costs shift the risk of carbon leakage down the value chain.
- These effects are stronger when free allocation is phased out at the same time, as the adjustment becomes more concentrated, more inflationary, and more costly for downstream industries.
- Maintaining free allocation does not eliminate trade-offs, but it substantially attenuates them.

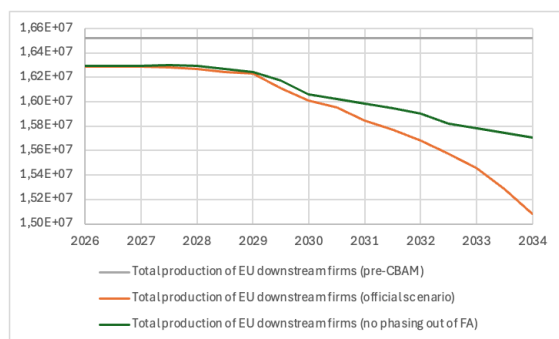


Figure 3 Total EU production in the downstream sector

Units: number of passenger vehicles

Legend: in both scenarios, downstream EU production decreases. This reflects the higher cost of the upstream input.

Source: Climate Economics Chair

7. Affordability impacts must be managed explicitly.

The report shows that higher costs can have significant effects on downstream sectors.

In the fertilizer value chain, the modelling suggests that EU farmers could face substantial income losses.

This raises affordability concerns and may require targeted support measures during this transition.

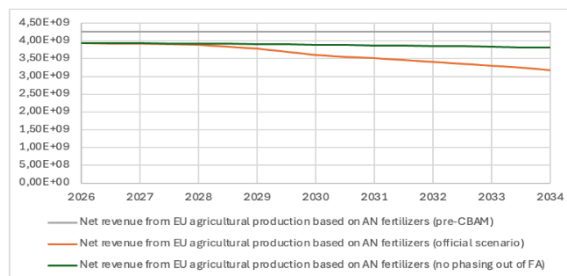


Figure 4 Revenue from the production of staple grains in the EU

Units: constant 2026 Euros

Legend: in both scenarios, revenue in the downstream EU sector decreases. This reflects both the decrease in production due to a lower use of AN fertilizer and the higher cost of that upstream input.

Source: Climate Economics Chair.

Further reading

Read the full paper: <https://ercst.org/carbon-leakage-under-cbam-and-free-allocation/>

Download the slide deck from the paper launch event: https://ercst.org/wp-content/uploads/2025/11/20260512_Launch-event-ppt_v3.pptx

About ERCST

The European Roundtable on Climate Change and Sustainable Transition (ERCST) is a Brussels-based think tank incorporated as a non-profit organization under Belgian law. ERCST provides rigorous intellectual analysis of EU and international climate change developments and policies, drawing on the experience and research of its staff as well as input from stakeholders who participate in its activities. ERCST provides original ideas and research into European and international debates on climate change policy. It represents its own views and strives to strictly ensure its independence and integrity.

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