



Addressing exports under CBAM

Solutions against carbon leakage risks

Version 1.0, November 2025



Key findings

- 1 From 2026, the EU CBAM will be an essential tool to prevent carbon leakage, but a small share of EU industrial output will remain exposed via exports.** Europe's trading partners accounting for 40 percent of CBAM-covered exports already price industrial emissions, but the rest goes to countries with little or no carbon price. The Commission is expected to propose a short-term fix by the end of 2025, but a solution is needed in the long term.
- 2 While carbon pricing systems are developing globally, a CBAM export adjustment can provide effective leakage protection in a way that respects global trade rules.** Granting free allocation to installations subject to carbon pricing for verified export shares would help safeguard industrial production. To maintain decarbonisation incentives, such adjustment should decline over time and be conditional on companies' progress in cutting emissions.
- 3 A credible export adjustment requires robust implementation; this is feasible using tracking tools and building-off the existing EU Emission Trading System.** Monitoring and tracing tools for CBAM product exports are already in place or under development, some of the value chains from production to export are short, and solutions for recognising third countries' carbon prices are advancing.
- 4 Tackling export-related carbon leakage is only one piece of the puzzle:** To drive industrial transformation, ensuring a strong carbon price alongside affordable power is key. Furthermore, the EU should rapidly scale green lead markets both in Europe and internationally to spur the demand that industry needs to invest in climate-neutral production.

Introduction

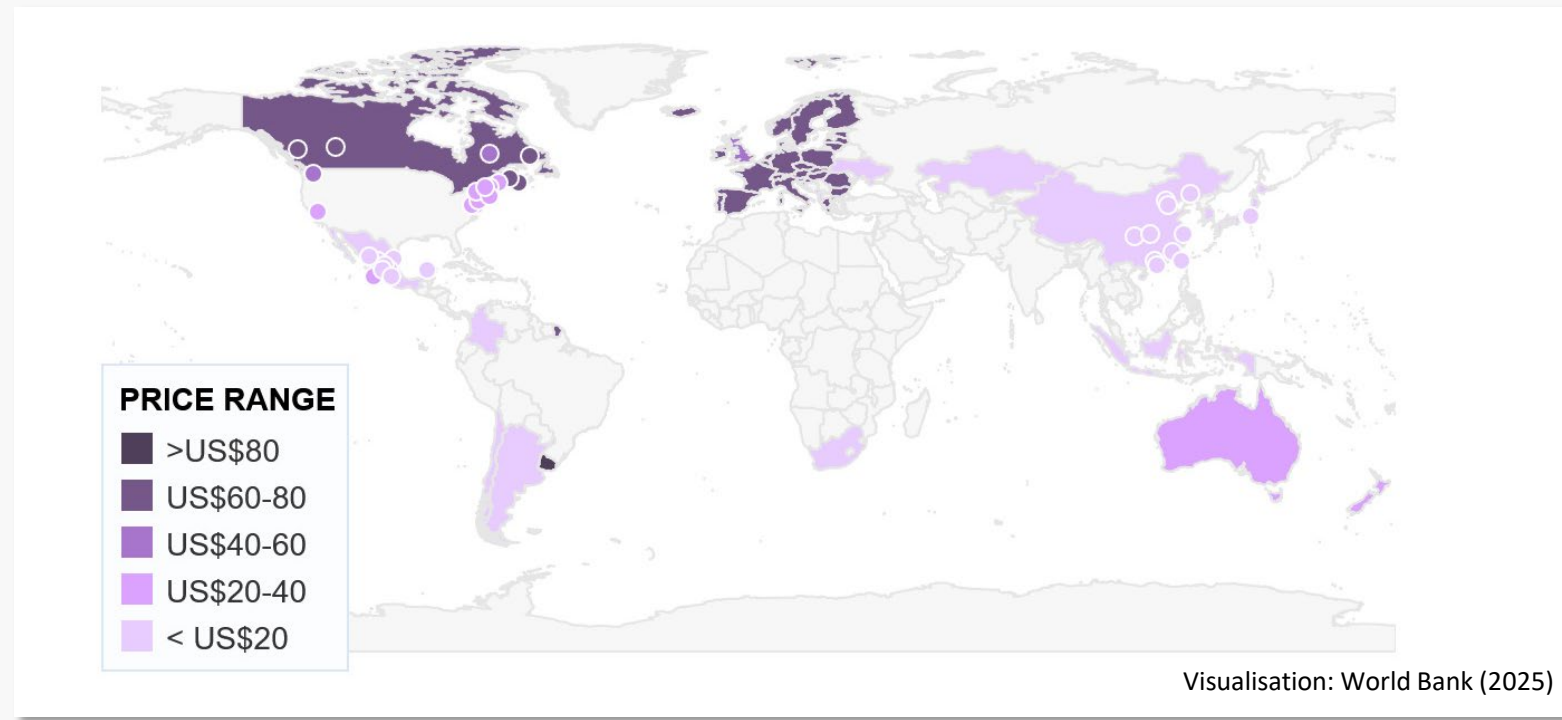
- The EU's Carbon Border Adjustment Mechanism (CBAM) will **unlock effective decarbonisation incentives** whilst mitigating the risk of carbon leakage, as free allocations are gradually phased out under the EU Emissions Trading System (or "ETS 1"). However, **by focusing on imports, CBAM does not provide a mechanism for EU exporters**, who represent around 15 percent of industrial production. Despite 40 percent of extra-EU CBAM exports going to jurisdictions with equivalent carbon pricing, **the majority flows to countries with weak or absent carbon price signals** – leaving a small but exposed share of industrial production at risk of export-related carbon leakage.
- The **EU's top exporters are Germany, France and Italy**. Among CBAM-covered goods, steel products represent the bulk of exports. Cement and clinker exports are geographically concentrated, especially near EU borders in Bulgaria, Spain and Greece. A few fertiliser producers also have high export shares outside the EU, while semi-finished aluminium products dominate the EU's external aluminium trade.
- Finding a solution to compensate the disadvantage of EU exporters in non-EU markets is a top priority among the various CBAM files. The European Commission's upcoming proposal for an interim phase is expected to take the form of financial compensation. Implemented efficiently, **an export adjustment under CBAM can support the growth of low-carbon EU exports in international green offtake markets**.

The case for an export adjustment mechanism under CBAM

Worldwide, carbon pricing mechanisms have expanded to encompass around one third of industrial emissions

Carbon pricing around the world for all sectors (2024)

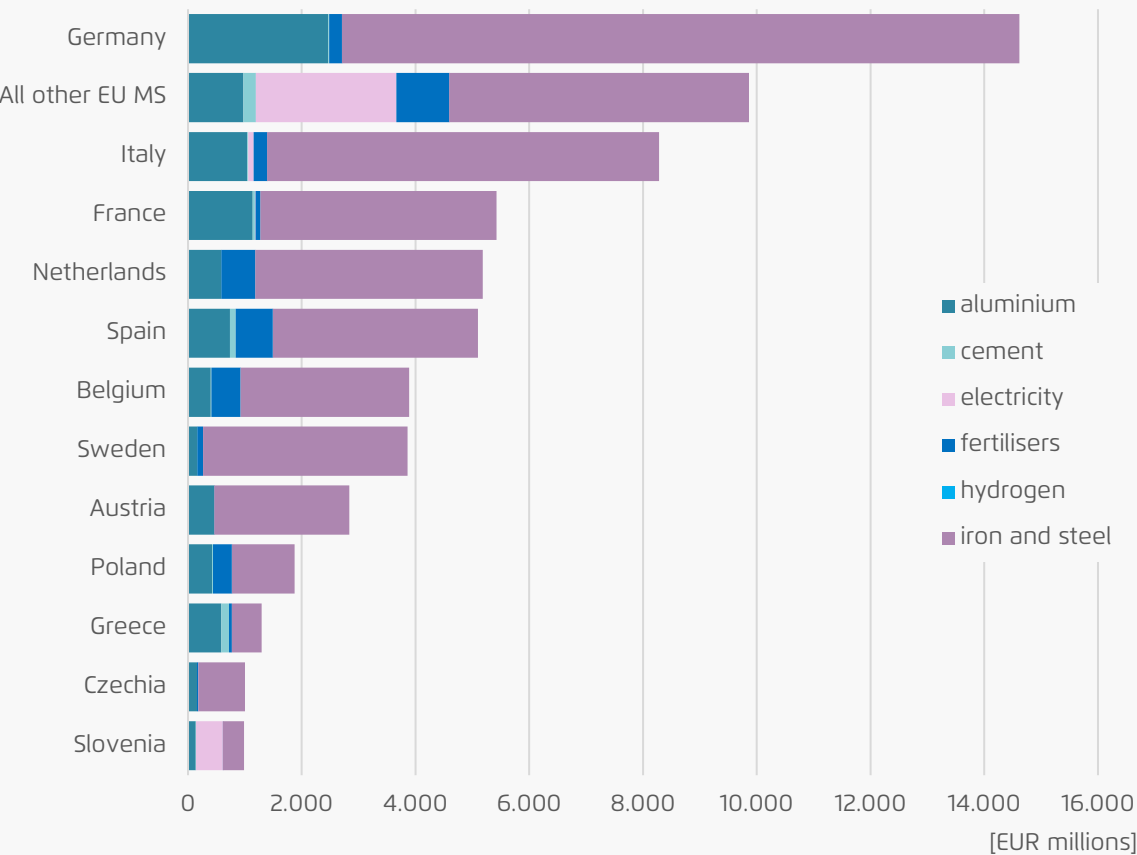
The heat map shows the level of the main price set by emissions trading systems or carbon taxes in each jurisdiction (USD per t CO₂ equivalent)



- The EU CBAM has created **positive momentum** for carbon pricing (notably in Brazil, India, Türkiye, China).
- **28 percent** (and rising) of global industrial emissions are subject to a carbon price.
- Yet **price levels** remain (significantly) below those of the EU.
- Progress on **border carbon adjustments** remains slow (except for in the United Kingdom).

Exports of CBAM products outside the EU are small, but significant for specific sectors, companies and EU countries

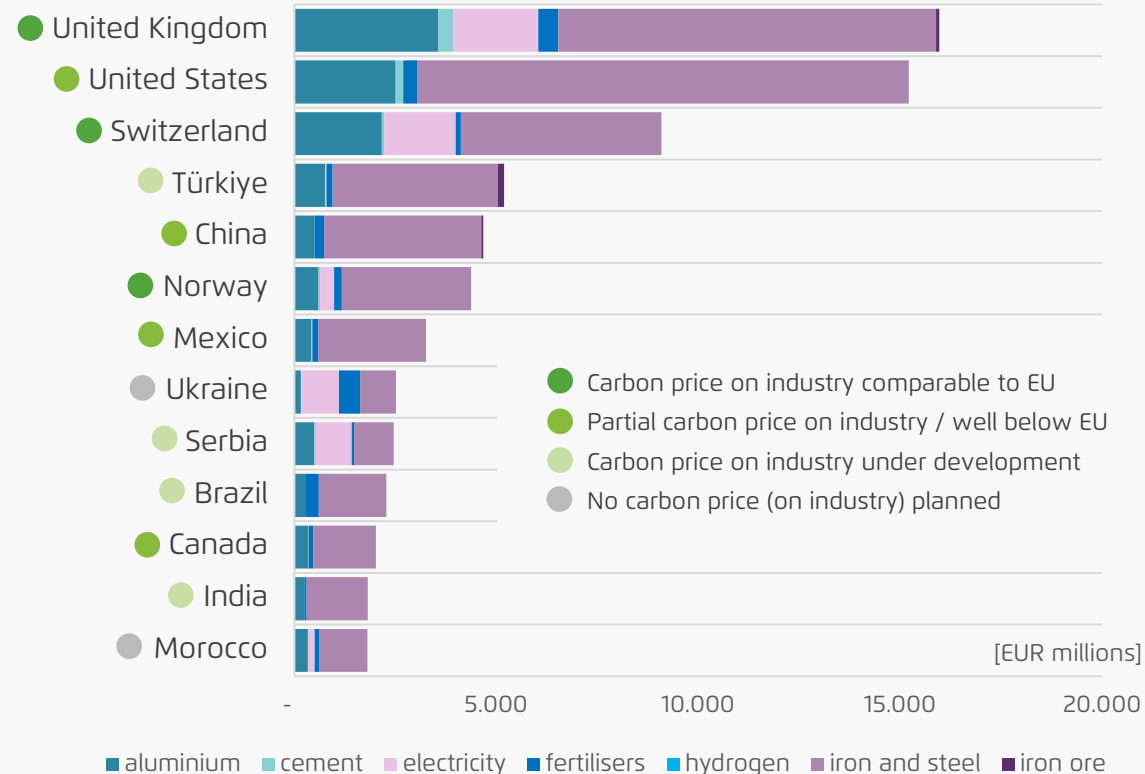
Value of EU CBAM exports by country (2024)*



- Extra-EU exports make up **15 percent of the production value** in CBAM sectors, contributing around **2 percent to the EU’s manufacturing Gross-Value Added (GVA)**.
- **Exports of iron and steel CBAM products** accounted for most of that share.
- There are important regional disparities. While extra-EU cement and clinker exports averaged **7 percent of production volumes since 2018**, Greece and Portugal export half of their production outside the EU.

Many export destinations (plan to) price industrial carbon emissions, but where they do, prices are often significantly lower than in the EU

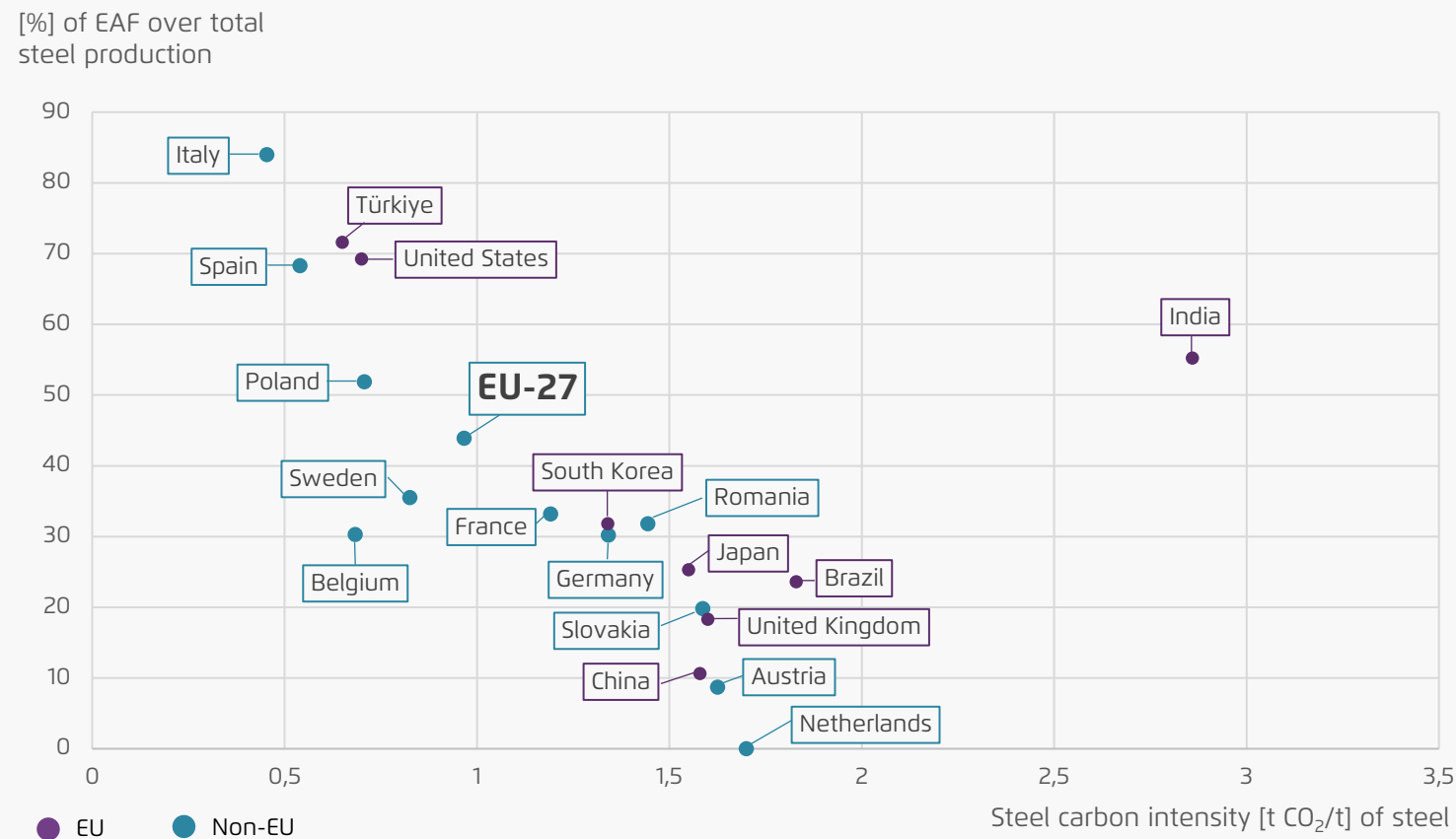
Major destination countries of CBAM-covered goods (2024)



- In 2024, **40 percent of the value of extra-EU CBAM exports** were destined to countries with comparable carbon prices on industry. Yet most exports are destined to countries with **lower carbon prices** (Canada, Mexico), **limited scope** (US, China) or currently **without schemes**, with some planning to cover industry (Türkiye, Brazil, India).
- For legal and political reasons, an Export Adjustment Mechanism (EAM) accounting for **carbon prices paid in the destination country** is important. However, this comes with challenges:
 - Final export destinations are often not known.
 - Goods can be shipped to an intermediate destination, then onwards to another destination.

CBAM products manufactured in the EU are generally less carbon-intensive than their international competitors

Carbon intensity (scope 1 emissions) of steel manufacturing (2021)

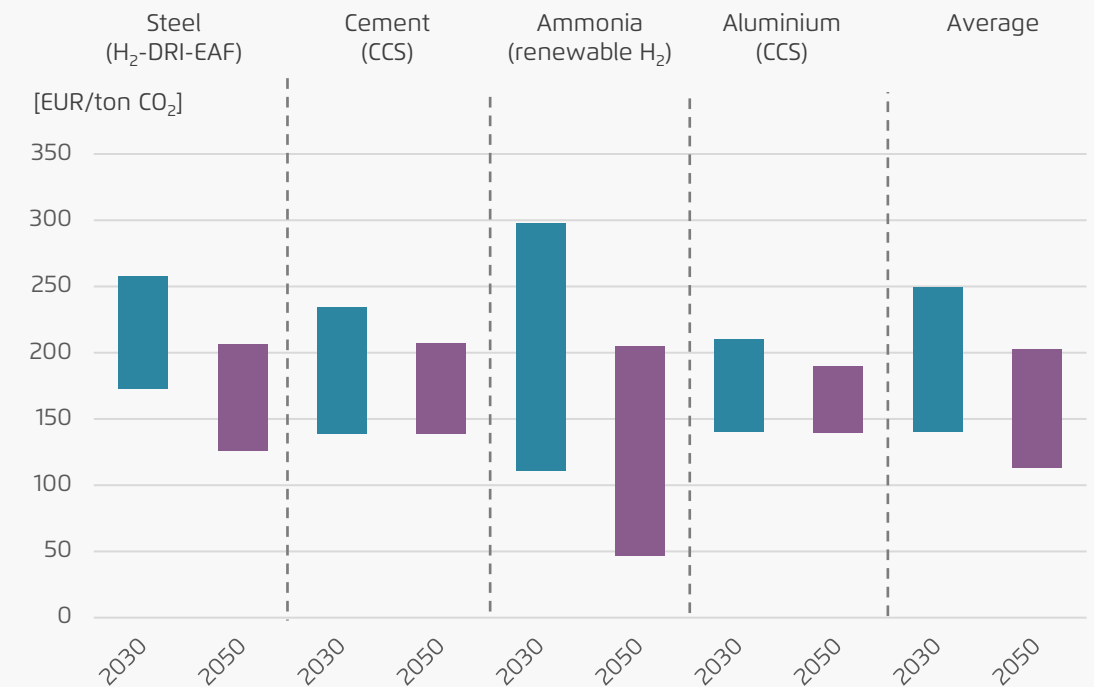


- Most of the production of steel both from BF* and EAF** sites in the EU has a **lower carbon intensity** than trading partners (and main export countries including UK, China, India, Brazil).
- This is due to **higher efficiency** and a slightly **lower carbon-intensive fuel mix** in the EU.

A CBAM export adjustment ensures the growth of low-carbon EU exports in international green offtake markets

- Within the EU, CBAM allows for carbon cost pass-through and **reduces the need for subsidies** covering the remaining green premium.
- But for installations exporting a significant share of their output, such carbon cost pass-through is more challenging. While **green offtake markets** are emerging internationally, they constitute a small share of the overall market.
- By mitigating carbon leakage risks for exporters whilst maintaining decarbonisation incentives, an EAM can support the **growth of low-carbon extra-EU exports**.

Marginal CO₂ abatement costs of near-zero emission technologies in 2030 and 2050*



Complying with international trade rules

A CBAM export adjustment mechanism can be compatible with World Trade Organisation rules depending on its design, but uncertainty remains



Is the EU ETS an indirect tax?

- Ambiguous according to legal assessments.
- However, the carbon costs borne by domestic producers can be measured with precision, and thus rebated in a non-trade distorting way, as with value-added tax under ASCM.*



WTO law: Does an EAM have environmental justification under Art XX?

- Yes, if GATT* applies to ASCM. Anti-leakage measures are an integral part of the ETS instrument. An EAM is not necessarily specific only to exporters, but a mirroring of the broader CBAM instrument on imports and both are integral to the functioning of the ETS.



Does the EAM confer a 'financial contribution'?

- Arguably not, as it is not fiscal/budgetary in nature but regulatory and thus arguably does not fall under Art. 1 of the ASCM.
- Not if it **avoids the risk of overcompensation vs actual ETS compliance costs**. A benefit does not occur relative to the current free allocation system or relative to other ETS installations, as non-exporters receive anti-leakage protection under CBAM.



WTO law: Underlying precedents

- Legal ambiguities remain. The lack of precedent in WTO dispute settlement leaves substantial residual uncertainty regarding how a WTO panel would adjudicate such cases.

Agora's recommendations on the design of a CBAM export adjustment

There are instrument design options, either linked to financial support...

Options	WTO compatibility	Effectiveness of export carbon leakage risks	Decarbonisation incentives	Feasibility of practical implementation	Speed of roll-out
Direct refund of carbon costs for exports	Limited	Medium – depending if targeted at exporters or sectoral average	Limited	Medium – depending on feasibility of tracking of export share	High – depending on the fund
Investment and production support for decarbonisation	Limited	Medium – depending if calculated based on export carbon leakage risks	Medium/High – Depending if conditional on real investments into decarbonisation options	Low – technically feasible, but mobilising sufficient financial resources would be challenging	High – however competes with other investment priorities and part of MFF* negotiations

→ The support could target all **manufacturers vs. exporters**, and specific **products vs. sector**. It can be adjusted based on **sectoral average of export carbon leakage risk**, or only considering the general **phase out of free allocations**.

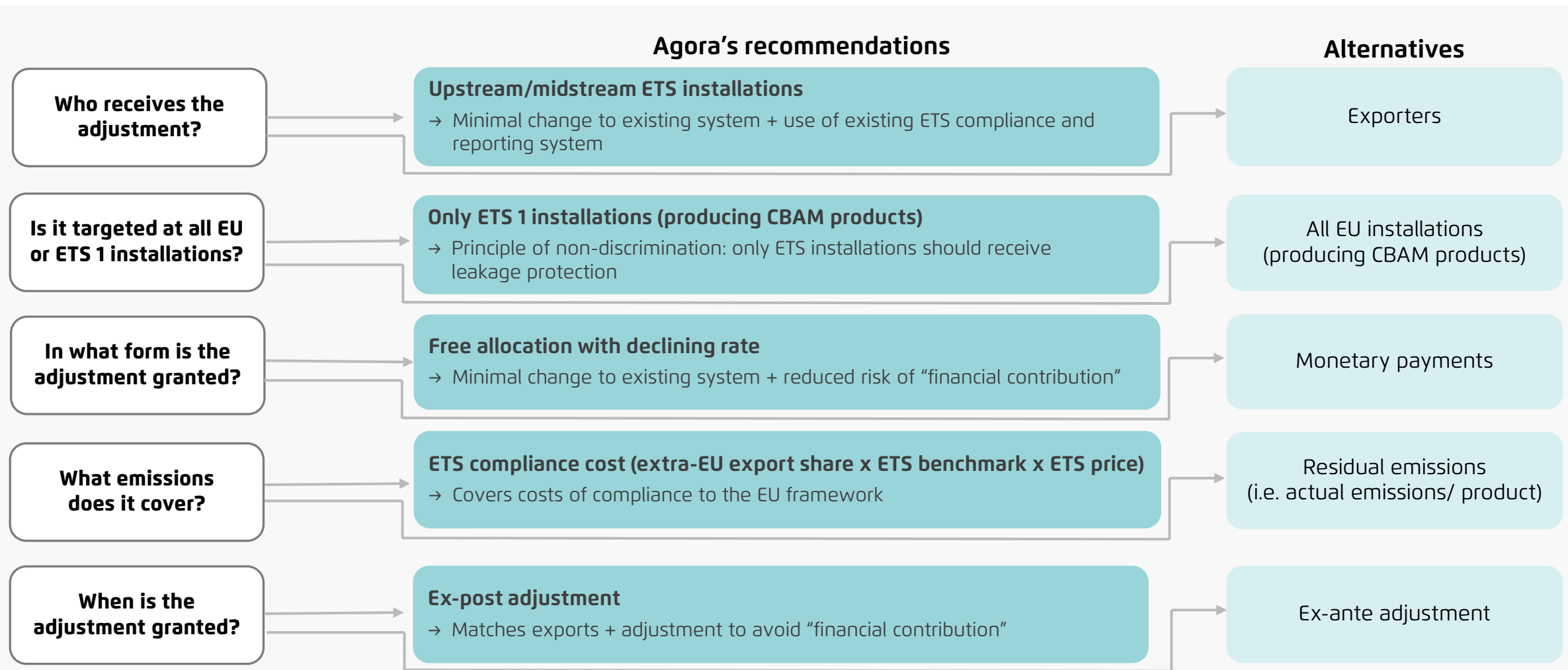
... or via the ETS

Options	WTO compatibility	Effectiveness of export carbon leakage risks	Decarbonisation incentives	Feasibility of practical implementation	Speed of roll-out
ETS exemption for exports	Medium	Medium – depending on procedure for verification of export share. Products must be targeted	Limited	Limited/Risky – emissions no longer under ETS cap, requires fundamental adjustment of ETS infrastructure	Medium
Non-tradable and non-fungible certificate	Medium	High – linked with export shares	High – if adjusted to ETS performance benchmarks and declining rate of allowances	Limited – requires new form of certificates and export traceability	Low
Agora's recommendation					
ETS free allocation for exports	Medium	High – linked with export shares	High – if adjusted to ETS performance benchmarks, a declining rate of allowances and companies' decarbonisation plans	Medium – Potential difficulty on export traceability	Medium

Key principles for an Export Adjustment Mechanism

- ✓ **Effectiveness** – Cover incremental carbon costs for exporters in CBAM sectors that non-EU trading partners do not have to pay
- ✓ **Environmental integrity** – Maintain full alignment with EU ETS ambition by preserving strong incentives to reduce emissions
- ✓ **Non-discrimination** – Avoid any measure that could constitute a subsidy, financial contribution or undue benefit to exporters
- ✓ **Proportionality** – Limit coverage strictly to verified export shares through transparent tracing mechanisms
- ✓ **Simplicity and transparency** – Build on existing anti-leakage and reporting tools, keeping administrative requirements light to ensure feasibility for both industry and regulators
- ✓ **International alignment** – Account for carbon prices due in destination countries to ensure coherence and promote cooperation
- ✓ **Predictability and visibility** – Provide early clarity to investors so they can factor policy implications into industrial investment decisions
- ✓ **Policy complementarity** – Design the mechanism as part of a wider package to address the green premium, including instruments such as the Industrial Decarbonisation Bank

An export adjustment via the EU ETS meets such key principles and can be designed in different ways



Who would receive the free allocation adjustment? Exporter or emitter?

Exporters and ETS installations are often not the same actors.

- **Option 1 (*preferred option*): provide free allocation to ETS installations (i.e., emitters).**
 - Avoids a new export-related measure “at the border”
 - Easier for reporting and adjusting allocation of allowances: same actors and systems
 - Avoids doubt about cost pass-through back to ETS installations (“financial contribution to exporter”)
 - ETS installations have the (detailed) data on emissions and are best positioned to attribute emissions to produced volumes
- **Option 2: free allocation to exporters, to facilitate determination of exact exported amounts.**
 - Reduces tracing costs where exported goods are produced upstream

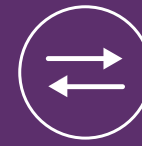
When would the adjustment be granted?



From 2028, ETS 1 sites **track verified export shares** of their CBAM products for future EAM claims.



In year t+1, by 31 March, ETS sites **submit verified annual emissions** for the previous reporting year.
ETS 1 sites **report verified export share** of CBAM products by weight and request adjustment.

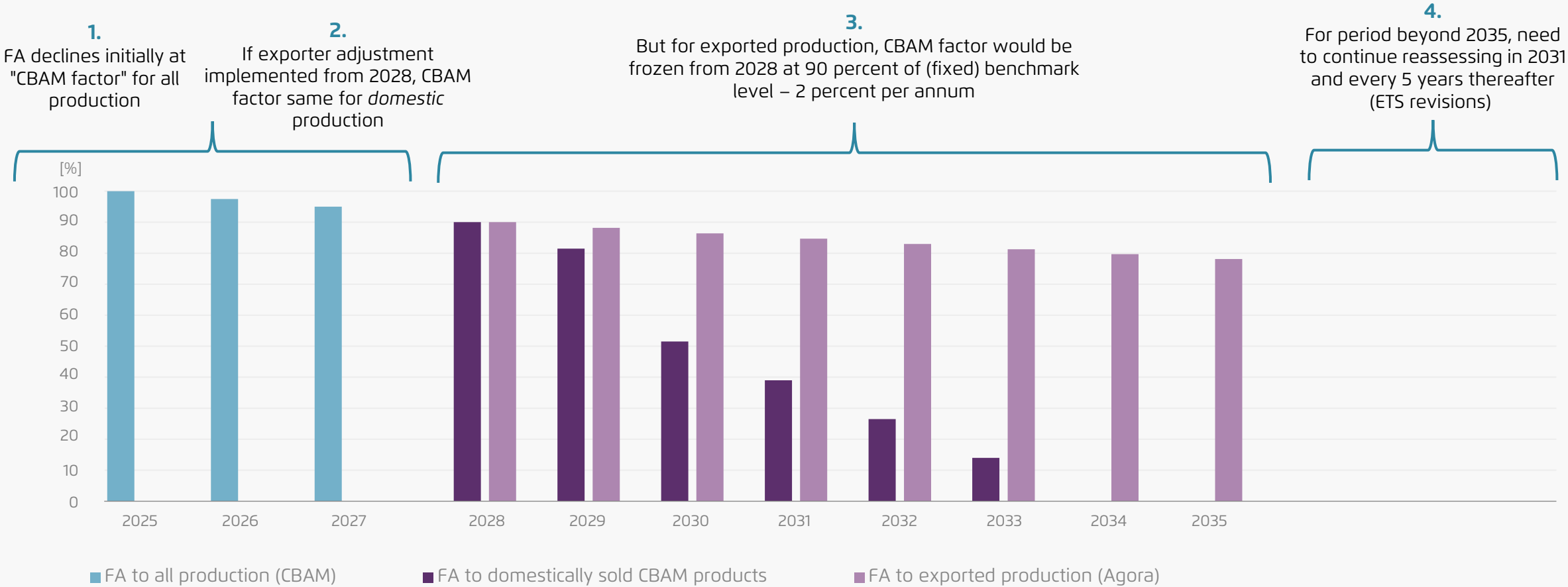


By 15 September, EAMs are **credited** by Union Registry to ETS 1 sites' registry account.
By 30 September, ETS sites **surrender allowances** for all ETS emissions, including for exported products.

In 2028, Union ETS Registry creates a **CBAM Exporter Adjustment Reserve** to provision for end-of-year allocations to installations.
Provision = average of past five years exports of CBAM products = approx. 15 to 20 percent of 2025 EU free allocation.

What would continued free allocation to exported production look like?

Share of free allocation (FA)* to domestically sold vs. exported CBAM products



How could ETS installations track verified data on the exported share of production ?

Under this design, the exporter would report to ETS installations on the amount (weight) of CBAM goods exported beyond the EU or European Economic Area. ETS installations could then claim the free allocation adjustment from the competent authorities. A few tools and procedures can support data tracing:

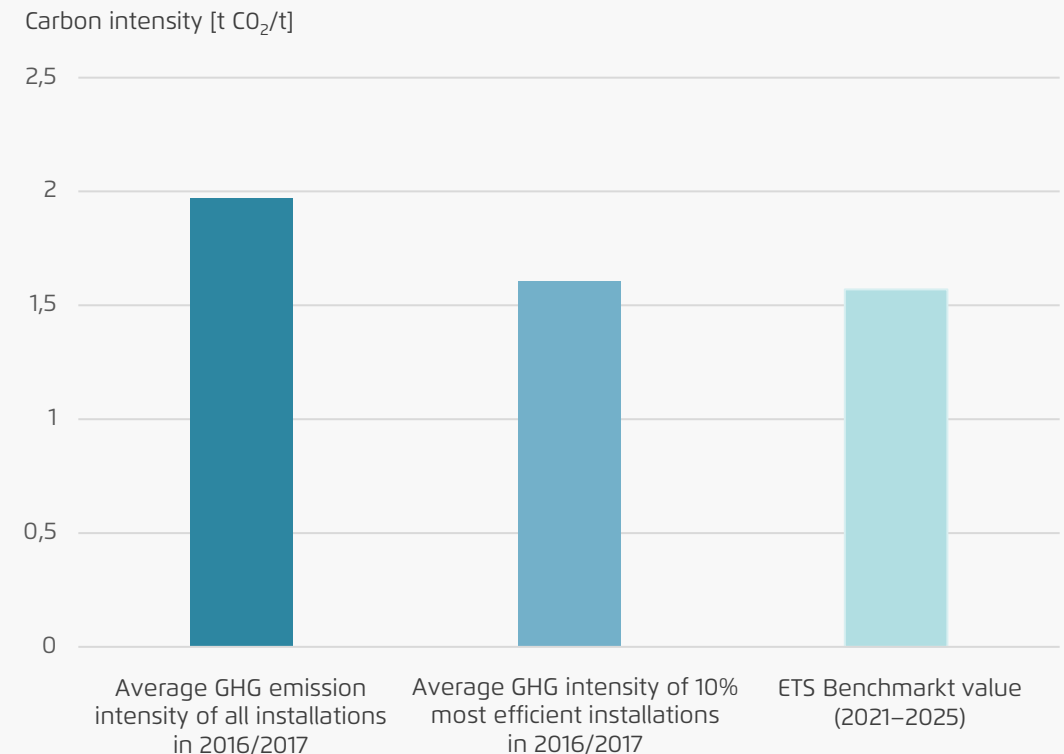
- **EU inward processing:** to minimise custom costs, companies exporting CBAM goods track the share of inputs sourced from abroad or domestically and where they are sent. Such an approach can be built upon;
- **A unique ETS installation identifier:** granted to CBAM products (ETS permit number) reported in Product Declaration of Performance for exporters' access;
- **The Digital Product Passport:** enabling digital tracking of products' information along the value chain as part of declaration of performance (implemented by the revised Ecodesign Regulation), making it easier for exports to identify relevant ETS installations;
- **CBAM Registry:** the solution developed for CBAM imports can be replicated to track export shares; and
- **EU Customs Data Hub:** could be expanded to exports to centralise and digitalise reporting of export shares.

How could an export adjustment maintain decarbonisation incentives?

This could be done by:

- linking the adjustment to the **ETS benchmarks** of the 10 percent best performing installations (with annual reduction rates);
- a system of **continuously declining rate of free allowances** allocations to the export share (also avoids overcompensation) for e.g., 2 percent; and/or
- linking to **companies' decarbonisation plans**. Such conditionalities currently being developed by the Commission for the interim phase of the export adjustment will be a good starting basis. However, these risk being weaker and difficult to enforce and monitor.

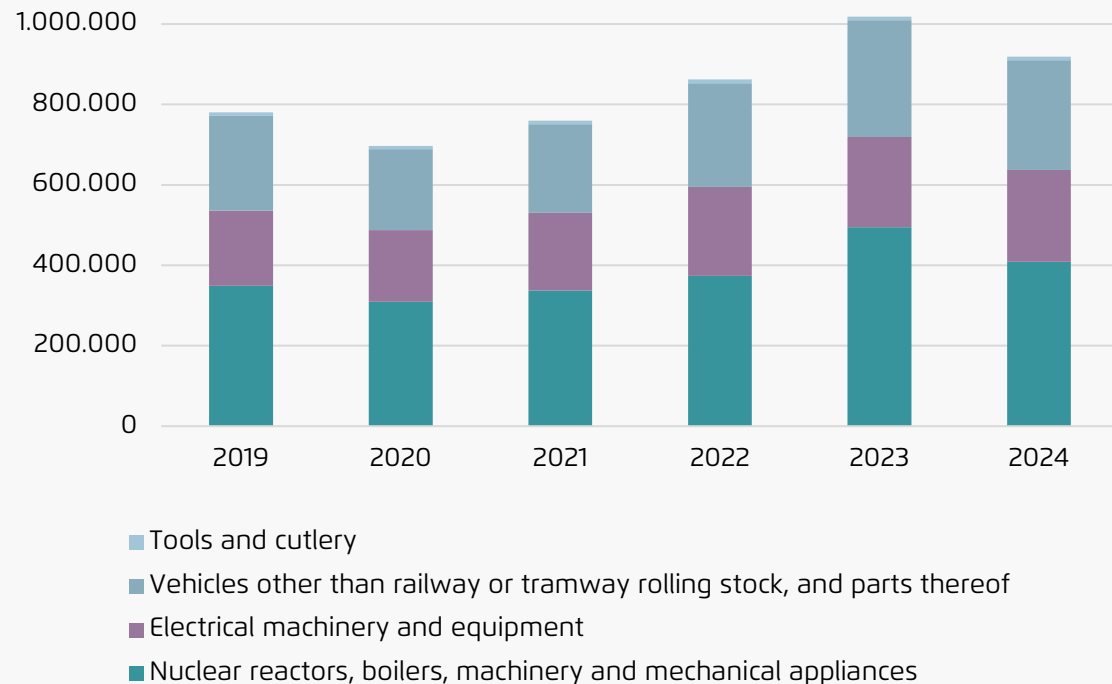
Comparison of the EU ETS ammonia benchmark with the average carbon intensity of EU installations*



The adjustment can be extended to downstream products once included in CBAM

EU exports of downstream steel and aluminium products (2019–2024)

[EUR million]



- In both the steel and aluminium sectors, exports of **downstream products** (e.g., machinery, cars and car parts) are significant.
- For political, administrative and legal reasons (as these products are currently not covered by CBAM) granting them an export adjustment is tricky.
- If CBAM were extended to downstream products – as is currently being discussed – an export mechanism could also be extended accordingly.

Further considerations for the implementation of an Export Adjustment Mechanism

- EAM should apply to the **most emission-intensive** part of the manufacturing stage covered by the EU ETS, i.e., excluding final processing steps in some sectors.
- EAM that involves free allocation would require a **solution that is feasible in the long run**, when allowances become increasingly scarce.
- EAM should be **targeted at real exports**, instead of all installations from sectors at risk of carbon leakage.
- **Regular reviews of export carbon-leakage risks** are essential, with the option to suspend the phase-out of free allocations where no risks are identified, informed for instance by tracking carbon-pricing developments in key export markets.

Upcoming changes to existing CBAM for imports should be mirrored for the Export Adjustment Mechanism

- **EAM must prevent “adverse resource shuffling”:** EAM must not create an incentive for more emission-intensive EU installations to produce primarily for export, in order to take advantage of the adjustment.
- **EAM should be adjusted to reflect domestic carbon prices in the destination country:** drawing on the ongoing work to identify carbon prices effectively paid in third countries as part of CBAM implementation for imports.
- **EAM may be extended to downstream products:** to be included in the EAM scope where these are significant and if they are included under the import CBAM. Same holds for precursors, e.g., scrap in the case of metals and aluminium.
- **EAM sectoral scope should reflect the scope of the inward-oriented CBAM:** if further products or sectors are included under the import CBAM (e.g., polymers or other parts of chemical industry products), they should also fall under the scope of the EAM.

How feasible is it for exporters to report back non-EU export shares to ETS installations in different sectors?



Fertilisers:

- Most exports are finished fertilisers; ammonia exports are limited
- Most exporting installations are the ETS installations
- Since most products are sold in bulk, it is not difficult to track what stays in the EU vs. what is exported



Cement and clinker:

- Tracing exports should not be a problem, given the simplicity of the cement value chain
- Exporters are geographically concentrated (Greece, Italy, Bulgaria, Spain)
- There are also some intermediaries in the value chain



Aluminium:

- 80 percent of extra-EU exports are aluminium products, often alloyed with other materials and processed by installations not covered by ETS 1
- Downstream reporting can be challenging for SMEs* and given confidential data
- Default values and EU inward processing can help in the short run, digitalised tracking via a product pass and the Customs data hub in the long run



Iron and steel:

- Easier for long steel products with a shorter value chain, compared to flat steel
- Tracing may be challenging for smaller companies, especially those exporting articles of iron and steel or service centres
- Easier to track within one group of companies



Feasible



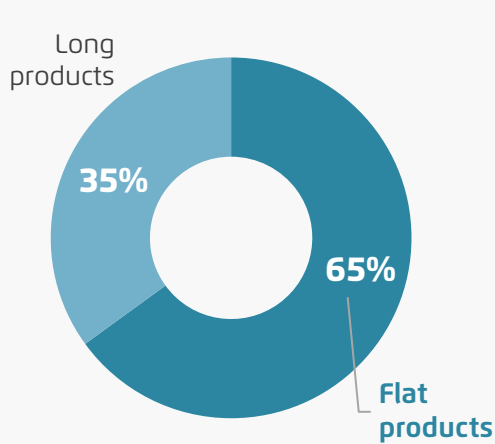
Some challenges



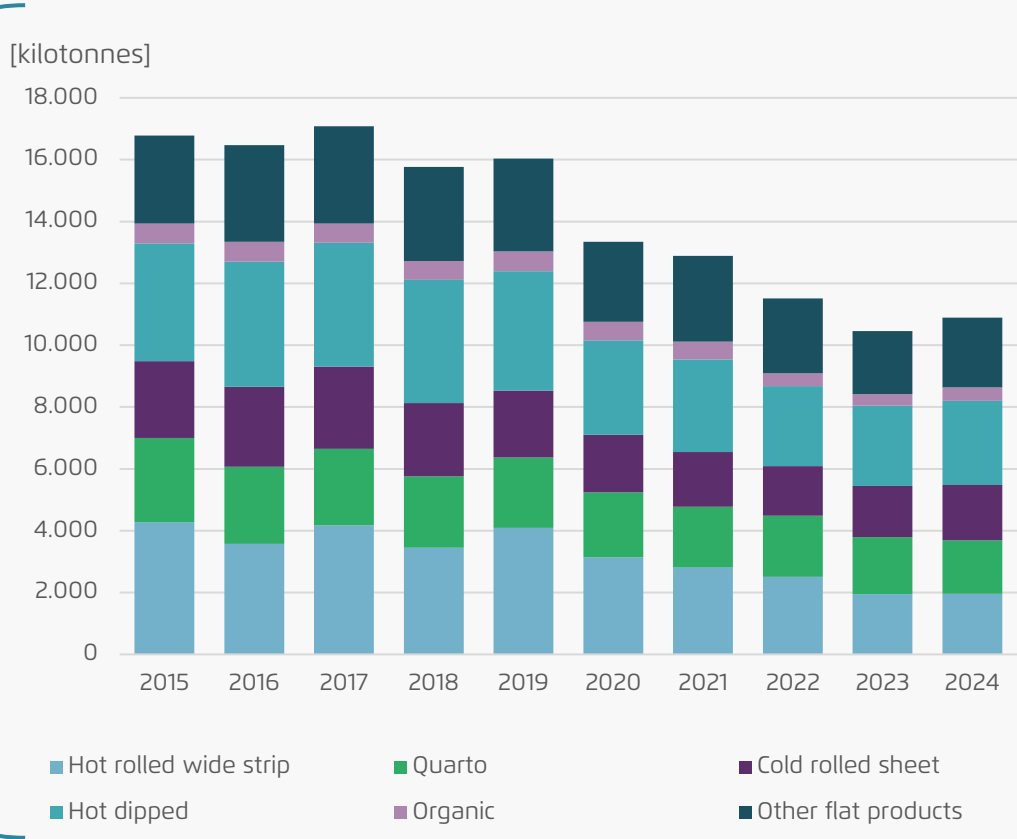
Impossible

The longer the value chain, the more challenging tracing becomes; in the steel sector, processed flat steel products dominate extra-EU exports

Yearly average of EU Exports of aluminium products



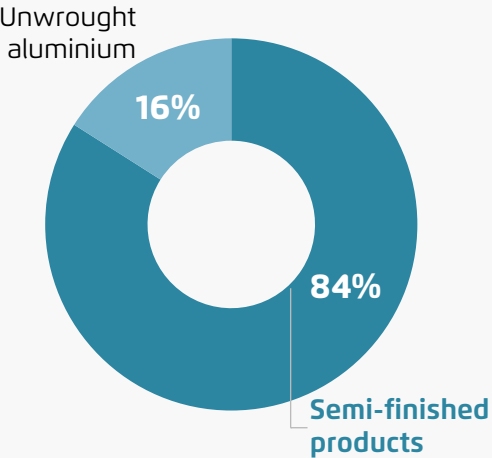
Yearly EU Exports of flat steel products covered by CBAM (2014–2023)



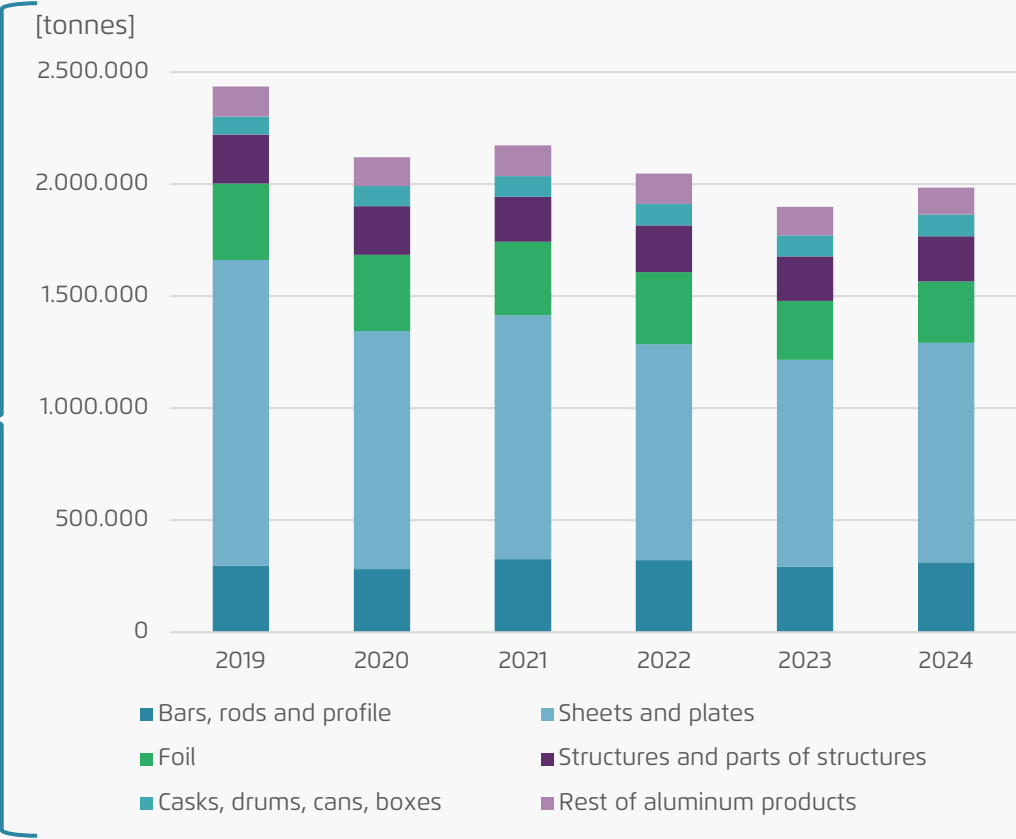
- **Tracing** the origins of the product is more challenging for steel products traded via steel service centres; it can be regarded as commercially sensitive information.
- **Default values** of export shares could be used for smaller companies and service centres.
- **A transitional phase** can help test traceability.
- For **circular steel flows**, the ETS price could be re-instated via inward processing.

Similarly, semi-finished products dominate the extra-EU export share of the aluminium sector

Yearly average of EU Exports of aluminium products

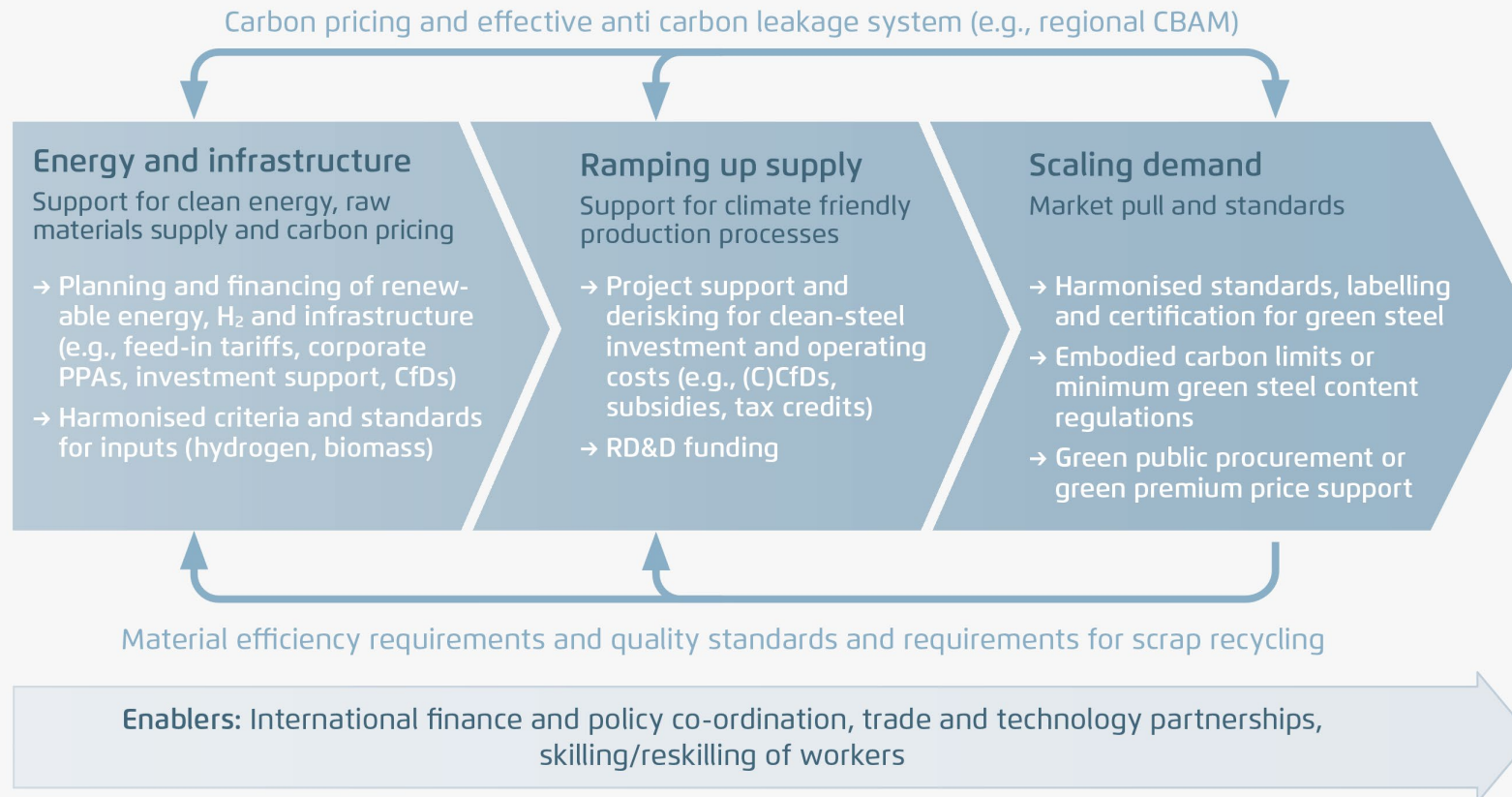


Semi-finished products* (between 2019–2024)



- Aluminium **semi-finished products** dominate the EU export market (around 80 percent).
- These are processed, e.g., by rolling mills, often owned by **multinational companies**, with higher capacities for tracing, while other market actors are mostly **SMEs**.
- **Default values** and **EU inward processing** can help in the short run, **digitalised tracking** via a **Product pass** and the **Customs data hub** in the long run.

A CBAM export adjustment is one piece of the puzzle — the strongest carbon leakage protection is a regulatory framework incentivising green investments



- **A fast transition to green industrial production in the EU** reduces its carbon footprint and secures future green markets.
- **De-risking instruments** for investments, **power-price relief**, a strong **ETS price signal**, a swift **CBAM implementation** and scaling up lead markets in the EU and internationally will in turn reduce the demand for free allocation for exports.

Appendix

List of abbreviations

ASCM: Agreement on Subsidies and Countervailing Measures

BF: Blast Furnace

CBAM: Carbon Border Adjustment Mechanism

CCfDs: Carbon Contracts for Difference

CCS: Carbon capture and storage

DRI: Direct reduced iron

EAF: Electric Arc furnace

EAM: Export Adjustment Mechanism

ETS 1: EU's Emissions Trading System 1

FA: Free allocation

GATT: General Agreement on Tariffs and Trade

GVA: Gross Value Added

H₂: Hydrogen

SME: Small and Medium Enterprise

WTO: World Trade Organisation

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