

Carbon Border Adjustment Mechanism

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This L&RS Note provides an overview of the Carbon Border Adjustment Mechanism, which is part of the EU 'Fit for 55' Package. It examines the background to the instrument, its objectives, scope, and implementation timeline. It also considers the potential implications of the mechanism on developing countries and on the competitiveness of EU industry.

Introduction

In December 2019, the European Commission adopted a [communication](#) on the European Green Deal. This was followed, in July 2021, by the 'Fit for 55' [communication](#), containing a package of legislative proposals to help achieve the target of a net 55% reduction in greenhouse gas (GHG) emissions by 2030, as an intermediate goal towards climate neutrality by 2050. The package included the proposal to put forward a Carbon Border Adjustment Mechanism (CBAM). The CBAM is a new EU instrument for preventing carbon leakage. This refers to the situation that occurs when industries transfer production to other countries with less stringent climate policies, or when EU products are replaced by more carbon-intensive imports. This note provides an overview of the CBAM by examining the background to its introduction, its objectives, scope of activity, and the timeline for its implementation. It also considers the possible implications it may have for developing countries and on the competitiveness of EU industry.



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Background

What is it?

The Carbon Border Adjustment Mechanism puts a price on the emissions of carbon intensive goods imported into the EU such as aluminium, cement, iron and steel. This is to ensure a level playing field between EU industry, which is subject to a carbon price in the [EU emissions trading system](#) (EU ETS), and foreign producers in countries that do not have an equivalent system in place.

The CBAM [Regulation](#) ("Regulation") is part of the European Commission's Fit for 55 package aiming to reduce GHG emissions by at least 55% by 2030 (compared to 1990 emission levels) and was proposed by the European Commission on 14 July 2021. It was formally adopted on 10 May 2023 and entered into force seven days later.¹

The CBAM system mirrors the EU ETS and works as follows:²

- CBAM is applied on the actual embedded emissions in the goods imported in the EU, determined according to a methodology that is in line with the reporting of emissions under the EU ETS for the production of the same goods in the EU.
- As from the entry into force of the definitive period of CBAM in 2026, EU importers will buy CBAM certificates corresponding to the carbon price that would have been paid, had the goods been produced under the EU's carbon pricing rules.
- Conversely, if a non-EU producer has already paid a carbon price in a third country on the embedded emissions for the production of the imported goods, the corresponding cost can be fully deducted from the CBAM obligation.

The EU is one of the first regions to implement a Carbon Border Adjustment Mechanism, although California has applied an adjustment to certain imports of electricity under its Cap-and-Trade Program which came into operation in 2012.³ Other countries such as Canada⁴ and the UK⁵ are exploring similar initiatives. In addition, the IMF^{6,7} and the OECD⁸ have recently carried out work to study how such measures could support international efforts to reduce greenhouse gas emissions.

¹ Baker McKenzie, '[European Union: The Commission publishes CBAM reporting requirements for transitional period](#)', 4 September 2023.

² European Commission, '[Carbon Border Adjustment Mechanism Questions and Answers](#)', last updated 31 January 2024.

³ LPDD, '[California ETS Border Carbon Adjustment](#)', webpage last accessed 1 March 2024.

⁴ Government of Canada, '[Exploring Border Carbon Adjustments for Canada](#)', webpage last accessed 1 March 2024.

⁵ GOV.UK, '[New UK levy to level carbon pricing](#)', 18 December 2023.

⁶ Parry, Ian, Peter Dohlman, Cory Hillier, Martin Kaufman, Kyung Kwak, Florian Misch, James Roaf, and Christophe Waerzeggers (2021), '[Carbon Pricing: What Role for Border Carbon Adjustments?](#)' IMF Staff Climate Note 2021/004, International Monetary Fund, Washington, DC.

⁷ Keen, M., Parry, I. and Roaf, J. (2021). '[Border Carbon Adjustments: Rationale, Design and Impact](#)' IMF Working Paper No. 21/239, September 2021.

⁸ OECD, '[Border Carbon Adjustments: What shape in the post-COVID geopolitical and economic landscape?](#)' Background Note for 40th Round Table on Sustainable Development, October 2020.

As a potential EU own resource, revenues from CBAM will contribute to the EU's budget with the European Commission planning to use these revenues to finance the reimbursement of the borrowing of [NextGenerationEU](#), the EU's Covid-19 recovery package agreed in 2020. It is estimated that the CBAM own resource will generate about €1.5 billion per year as of 2028 for the EU budget.⁹

How does it work?

The CBAM will mirror the ETS in the sense that the system is based on the purchase of certificates by importers. National authorities will authorise registration of declarants in the CBAM system, as well as reviewing and verifying declarations. They will also be responsible for selling CBAM certificates to importers.¹⁰ The [EPA](#) is the National Competent Authority (NCA) and [Revenue](#) (Customs Division) is the Customs Authority in Ireland for the CBAM regulation.

In order to import goods covered under the CBAM into the EU, importers must declare by 31 May each year the quantity of goods and the embedded emissions in those goods imported into the EU in the preceding year. At the same time, they must surrender the CBAM certificates they have purchased in advance from the authorities.¹¹

The CBAM will function as an import levy on carbon intensive goods imported into the EU. It will operate in two phases:¹²

- From 1 October 2023 under a transitional phase, importers of CBAM goods will be required to report to the European Commission on the amount of GHGs (expressed as carbon dioxide equivalent) emitted during the production of CBAM goods outside the EU on a quarterly basis. This report must be submitted no later than one month after the end of each quarter. Article 35 of the [Regulation](#) specifies what information must be included in the report.
- From 1 January 2026, businesses will be obligated to pay for the embedded emissions generated in the production of CBAM goods outside the EU. This payment will be in the form of purchasing CBAM certificates from the national CBAM authority.

⁹ European Commission, '[Questions and Answers: An adjusted package for the next generation of own resources](#)', 20 June 2023.

¹⁰ European Commission, '[Carbon Border Adjustment Mechanism: Questions and Answers](#)', 14 July 2021.

¹¹ Ibid.

¹² Osborne Clarke, '[EU implements a Carbon Border Adjustment Mechanism to combat carbon leakage to third countries](#)', 15 September 2023.

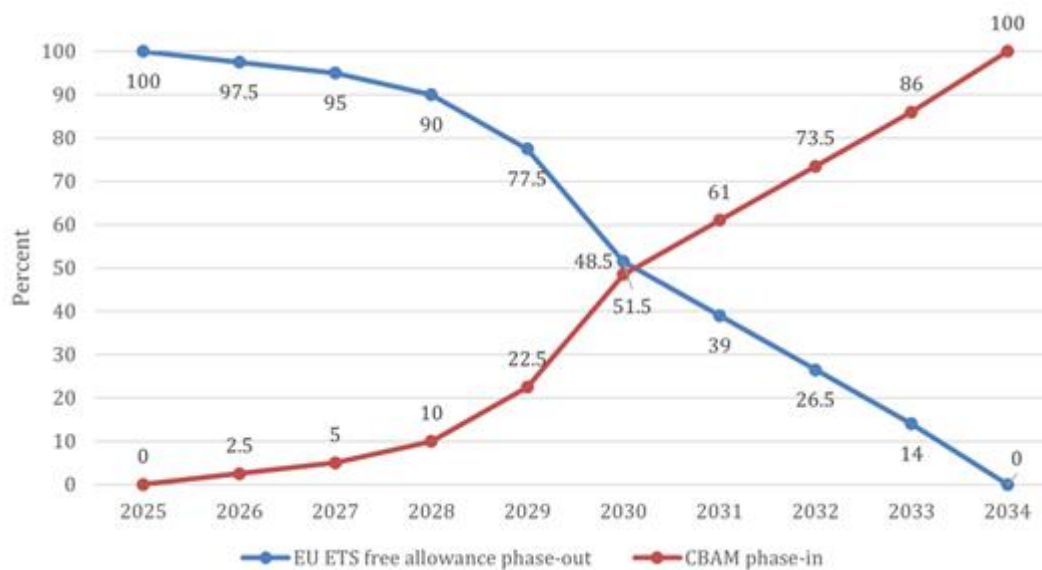
Objectives

The CBAM aims to prevent carbon leakage while ensuring the effectiveness of EU climate policy, thus attempting to level the playing-field between EU producers, which are subject to the EU ETS, and foreign producers, which may not have an equivalent system in place. In addition, the CBAM could potentially incentivise third-country governments to put in place more environmentally friendly policies, and third-country producers to reduce their emissions.¹³

During the transitional period (1 October 2023 to 31 December 2025), only reporting requirements are in place. From 1 January 2026, importers will have to acquire CBAM certificates for the GHG emissions associated with the production of imported goods that are not subject to equivalent carbon pricing in the country of origin. The price of the CBAM certificates follows the price of emissions allowances in the EU ETS, thus creating a level playing field between foreign and EU producers.¹⁴

The CBAM phase-in plan gradually replaces the free allocation of EU ETS allowances over a nine-year period (from 2026 to 2034) for sectors covered by CBAM. The phase-out of free allocations will begin at a slow rate before accelerating towards the end of the period as shown in Figure 1. It will also correspond directly to the CBAM phase-in, so that during the transition period CBAM will only apply to the proportion of emissions that are not subject to free allocation under the EU ETS.¹⁵

Figure 1: EU ETS free allowances phase-out and CBAM phase-in



Source: [ICAP](#)

¹³ European Parliamentary Research Service, '[Carbon border adjustment mechanism](#)', 1 December 2023.

¹⁴ Ibid.

¹⁵ International Carbon Action Partnership, '[EU adopts landmark ETS reforms and new policies to meet 2030 target](#)', 3 May 2023.

Scope

The CBAM will initially apply to imports of goods listed in Annex 1 of the [Regulation](#). This includes the following:

- cement
- iron and steel
- aluminium
- fertilisers
- electricity
- hydrogen

According to the European Commission, these sectors were chosen as they have a high risk of carbon leakage and high carbon emissions. The administrative feasibility of covering the sectors in the CBAM from the start was also taken into account.¹⁶

Under Article 30 of the [Regulation](#), the Commission shall present a report to the European Parliament and to the Council before the end of the transitional period on the application of the Regulation. The report shall contain an assessment of the possibility to extend the scope to:

- embedded indirect emissions in the goods listed in Annex II of the Regulation;
- embedded emissions in the transport of the goods listed in Annex I of the Regulation and transportation services;
- goods at risk of carbon leakage other than those listed in Annex I of the Regulation, and specifically organic chemicals and polymers; and
- other input materials (precursors) for the goods listed in Annex I of the Regulation.

The report will include a timetable setting out their inclusion by 2030.

In principle, imports of goods from all non-EU countries will be covered by the CBAM. However, certain third countries who participate in the ETS or have an emission trading system linked to the Union's will be excluded from the mechanism. This is the case for members of the European Economic Area¹⁷ and Switzerland.¹⁸

¹⁶ European Commission, '[Carbon Border Adjustment Mechanism: Questions and Answers](#)', 14 July 2021.

¹⁷ The European Economic Area includes EU countries and also Iceland, Liechtenstein and Norway.

¹⁸ European Commission, '[Carbon Border Adjustment Mechanism: Questions and Answers](#)', 14 July 2021.

Implementation timeline

Transitional phase (2023-2025)

On 17 August 2023, the European Commission adopted the [Implementing Regulation](#) regarding the reporting rules applicable during the transitional phase of the CBAM. The transitional phase will run from 1 October 2023 until 31 December 2025, during which only reporting obligations – but no carbon pricing – will apply.

The first reporting period for CBAM is Q4 2023, starting on 1 October 2023. The report for the first reporting period must be submitted no later than 31 January 2024. The last CBAM report of the transitional period, which is the report to be submitted for Q4 2025, should be submitted by 31 January 2026.¹⁹

Within those reports, importers must, inter alia, report the following:²⁰

- The type of goods as identified by their CN code.
- The quantity of imported goods and the direct and indirect emissions embedded in them (calculated pursuant to specific methods, see below).
- Any 'carbon price' already paid abroad for the emissions, including the carbon price paid for any precursor material embedded in the final product.
- The country where a carbon price is due.
- The country of origin of imported goods.
- The identity and location of the installations where the goods were produced.
- The production routes used for the manufacturing of the goods (and associated production parameters) as defined in the implementing regulation.

The [Implementing Regulation](#) on reporting requirements and methodology provides for some flexibility when it comes to the values used to calculate embedded emissions on imports during the transitional phase. Until the end of 2024, companies will have the choice of reporting in three ways:²¹

- full reporting according to the new methodology (EU method);
- reporting based on an equivalent method (three options); and
- reporting based on default reference values (only until July 2024).

As of 1 January 2025, only the EU method will be accepted and estimates (including default values) can only be used for complex goods if these estimations represent less than 20% of the total embedded emissions.²²

¹⁹ Baker McKenzie, '[European Union: The Commission publishes CBAM reporting requirements for transitional period](#)', 4 September 2023.

²⁰ Ibid.

²¹ European Commission [webpage](#) on the Carbon Border Adjustment Mechanism, last accessed 1 March 2024.

²² Ibid.

The report must be submitted to the CBAM Transitional Registry, which will be managed by the Commission. The CBAM Transitional Registry will be a standardised and secure electronic database containing a trader portal through which importers can submit the quarterly CBAM reports. Access to the registry can be requested through the National Competent Authority of the Member State in which the importer is established. Both the local NCA and the Commission will have access to this portal and its data.²³

The penalty for non-compliance, incorrect, or incomplete filing of a CBAM report shall be set by the individual Member State but must be between €10 and €50 per tonne of unreported embedded emissions.²⁴

Review of CBAM Regulation

As mentioned above, under Article 30 of the [Regulation](#), the Commission shall present a report to the European Parliament and to the Council before the end of the transitional period on the application of the Regulation.

In addition to considering expanding the scope of the Regulation, the report shall also take account of the following:

- the technical requirements for calculating embedded emissions for other goods to be included in the list in Annex I of the Regulation;
- the progress made in international discussions regarding climate action;
- the governance system, including the administrative costs;
- the impact of the Regulation on goods listed in Annex I imported from developing countries with special interest to the least developed countries as identified by the United Nations and on the effects of the technical assistance given; and
- the methodology for the calculation of indirect emissions pursuant to Article 7(7) and point 4.3 of Annex IV of the Regulation.

CBAM definitive regime (from 2026)

After the transition phase, importers will be required to purchase CBAM certificates. Reporting obligations are reduced from quarterly to annual reports due by 31 May of each year with the first report due on 31 May 2027 for the year 2026.²⁵

Authorised CBAM declarants, which fail to surrender the necessary number of CBAM certificates by 31 May of each year starting in 2027, will be held liable for the payment of fines equal to those under the EU ETS, meaning €100 for each tonne of CO₂ equivalent.²⁶

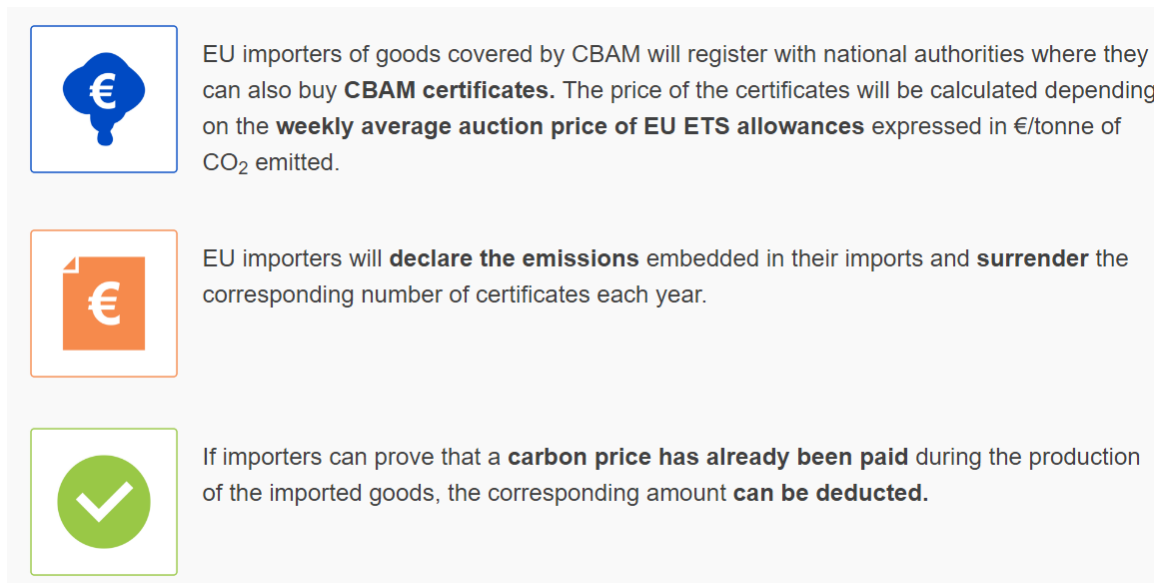
²³ Baker McKenzie, [‘European Union: The Commission publishes CBAM reporting requirements for transitional period’](#), 4 September 2023.

²⁴ Ibid.

²⁵ Dentons, [‘The EU Carbon Border Adjustment Mechanism \(CBAM\) applies now’](#), 21 February 2024.

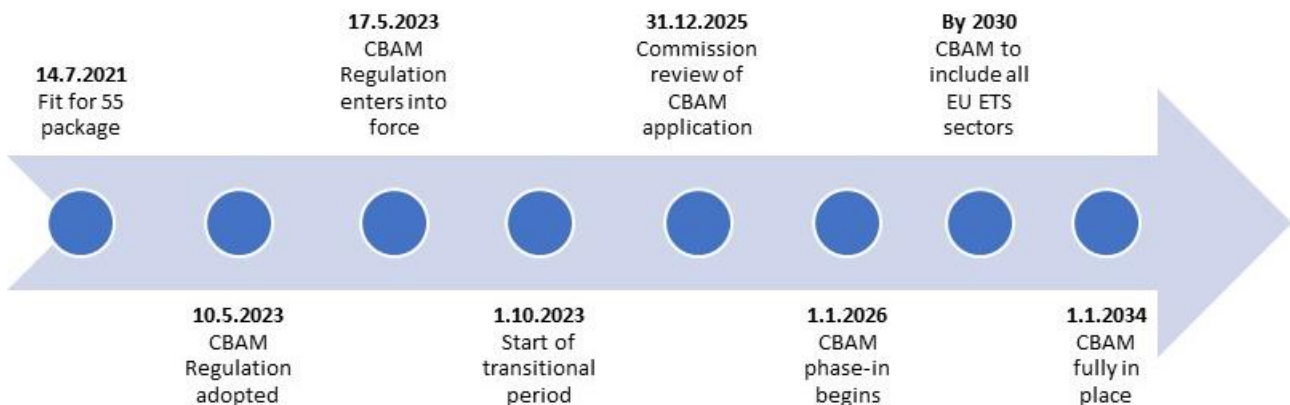
²⁶ Ibid.

Figure 2: CBAM definitive regime process



Source: [European Commission](#)

Figure 3: CBAM implementation timeline



Source: L&RS (adapted from [EPRS](#))

Implications for developing countries

According to the European Commission, the CBAM has been designed to comply with the EU's international commitments and obligations, including World Trade Organisation (WTO) rules.²⁷ While the EU CBAM has raised concerns internationally, with countries such as China and India previously stating their opposition to the proposal, it has not yet been formally challenged at the WTO.²⁸

Research by the World Bank shows that climate change mitigation policies can disproportionately affect low- and middle-income countries, leading to a decline in their trade compared to high-income economies.²⁹ The Bank's new CBAM Exposure Index³⁰ (Figures 4 and 5 below) shows for instance that Zimbabwe is the most vulnerable country, largely because of its sizeable exports of high carbon-emissions intensive ferroalloys to the EU. In Mozambique, almost 20% of the country's exports fall under CBAM, impacting the economy, especially with 97% of aluminium exports going to the EU.³¹

For this reason, environmental NGOs have argued that Least Developed Countries (LDCs) and Small Island Developing States (SIDS) might be exempted from CBAM or instead that CBAM revenues accruing to the EU budget should be used for international climate finance in order to show that the EU recognises and respects the UNFCCC's principle of "common but differentiated responsibilities". Under the current proposal, such revenues are to accrue entirely to the EU's 'own resources', to repay part of the debt generated under the EU Covid-19 recovery package.³²

²⁷ European Commission, '[Carbon Border Adjustment Mechanism Questions and Answers](#)', last updated 31 January 2024

²⁸ Euractiv, '[Emerging economies share 'grave concern' over EU plans for a carbon border levy](#)', 12 April 2021.

²⁹ World Bank, '[Trading in a new climate: How mitigation policies are reshaping global trade dynamics](#)', World Bank blogs, 13 February 2024.

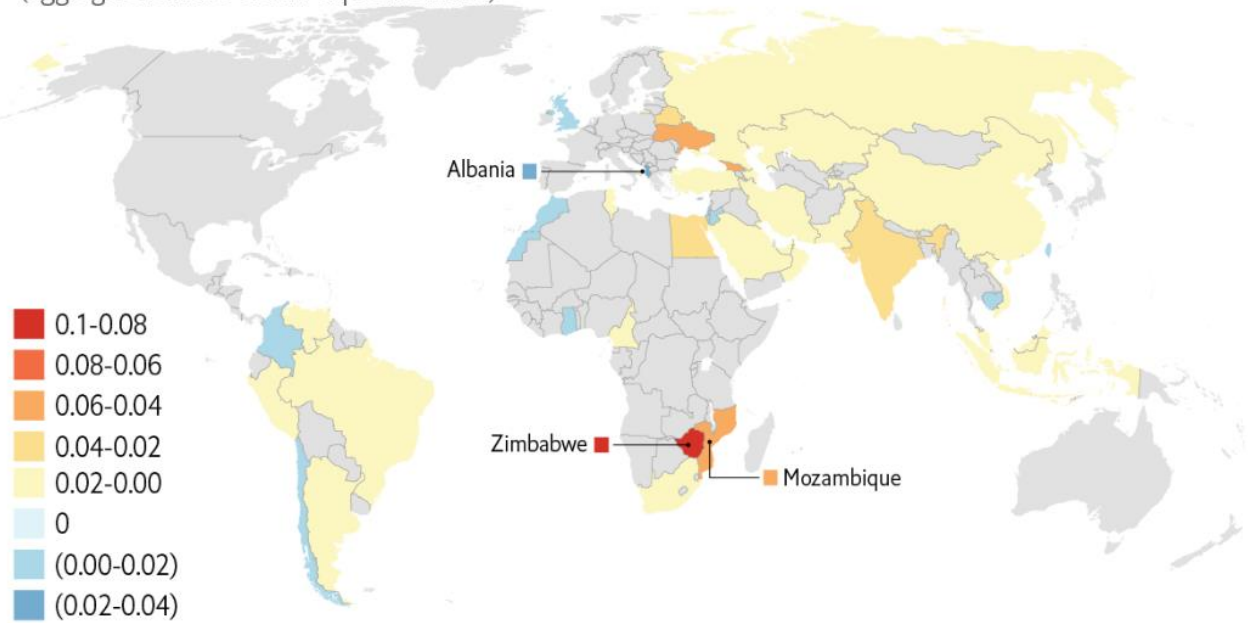
³⁰ The relative CBAM exposure index is measured by multiplying the export share by the difference between the exporter's emissions intensity and the EU average emissions intensity for the CBAM product, scaled by the assumed CBAM price. Further information is available [here](#).

³¹ World Bank, '[Trading in a new climate: How mitigation policies are reshaping global trade dynamics](#)', World Bank blogs, 13 February 2024.

³² World Wildlife Fund, '[Joint NGO statement on the Carbon Border Adjustment Mechanism](#)', December 2021.

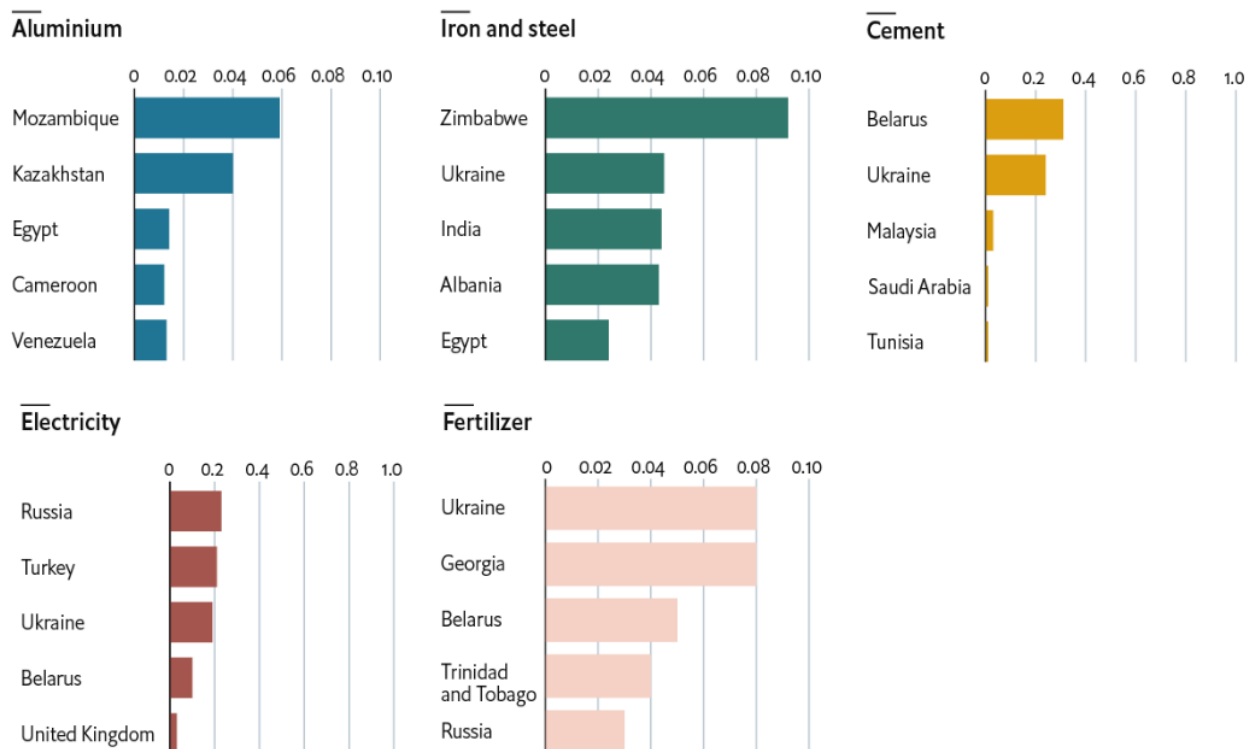
Figure 4: Vulnerability of countries based on the relative CBAM aggregate exposure index**CBAM will shuffle global trade**

(aggregate relative CBAM exposure index)



Source: [The Economist](#) (adapted from the [World Bank](#))

Figure 5: Vulnerability of countries by product based on the relative CBAM aggregate exposure index



Source: [The Economist](#) (adapted from the [World Bank](#))

The United Nations Conference on Trade and Development (UNCTAD) published a report in July 2021 that examined the implications for developing countries of the introduction of a CBAM.³³ The report looked at the potential effects of the CBAM on CO₂ emissions, trade, income and employment in the European Union (EU) and its main trading partners. The findings indicated that while the CBAM would help reduce CO₂ emissions, it would lead to a displacement in exports from developing countries to those countries with more carbon efficient production processes. It states the following:

“The study confirms that the introduction of carbon pricing coupled with a CBAM helps reduce CO₂ emissions, inside and outside the European Union. International trade patterns change in favour of countries where production is relatively carbon efficient. However, the reduction represents only a small percentage of global CO₂ emissions. The introduction of a CBAM results in declines in exports in developing countries in favour of developed countries, which tend to have less carbon intensive production processes.”

To address these distributional impacts, UNCTAD suggest that the EU could consider introducing supportive policies such as using the revenue generated from CBAM to accelerate the diffusion and uptake of cleaner production technologies in developing countries in the CBAM's targeted sectors.

³³ United Nations Conference on Trade and Development, ‘[A European Union Carbon Border Adjustment Mechanism: Implications for developing countries](#)’, 14 July 2021.

Potential competitiveness impacts

According to the European Commission's [Impact Assessment](#) report, EU producers of the five product categories could potentially see their output increase as competing imports from third countries fall under the CBAM. At the same time, their free allowances under the EU ETS are to be gradually phased out, which could result in a reduction of EU exports compared to a scenario where the EU ETS cap is strengthened but free allocations are maintained.³⁴

EU downstream producers that use the five product categories as inputs (e.g. manufacturers of components or finished goods) in their supply chains could also potentially be affected. Depending on the share of inputs used, downstream users are typically slightly worse off under the CBAM as they face higher input prices, though they could be incentivised to change their suppliers and source less carbon-intensive inputs to help reduce this impact.³⁵

EU industry representative groups have generally welcomed the idea of the CBAM to the extent that it can level the playing-field between European and foreign competitors, but express reservations about its design and implementation. For some, maintaining the allocation of free allowances under the EU ETS for industry sectors exposed to carbon leakage is preferable, at least in the initial phase until the CBAM has proven its effectiveness.³⁶

³⁴ European Parliamentary Research Service, '[EU carbon border adjustment mechanism: Implications for climate and competitiveness](#)', 13 June 2023.

³⁵ European Commission, '[Impact Assessment Report on the Proposal for a regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism](#)', 14 July 2021.

³⁶ European Roundtable on Climate Change and Sustainable Transition, '[Summary of stakeholder responses to the public consultation for a border carbon adjustment in the EU](#)', 25 November 2020.

Suggested further reading

EU Carbon Border Adjustment Mechanism

- European Commission, '[Carbon Border Adjustment Mechanism Questions and Answers](#)', last updated 31 January 2024.
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International developments relating to border carbon adjustments

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- International Institute for Sustainable Development, '[Policy Brief on Border Carbon Adjustments](#)', August 2023.
- Keen, M., Parry, I. and Roaf, J. (2021). '[Border Carbon Adjustments: Rationale, Design and Impact](#)' IMF Working Paper No. 21/239, September 2021.
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- Zhong, J. and Pei, J. (2022), '[Beggars thy neighbor? On the competitiveness and welfare impacts of the EU's proposed carbon border adjustment mechanism](#)', *Energy Policy*, Vol. 162.

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