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A STORM IN A TEACUP

IMPACTS AND GEOPOLITICAL RISKS OF THE EUROPEAN CARBON BORDER ADJUSTMENT MECHANISM

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Executive Summary

On 14 July 2021, the European Commission put forward its proposal for a carbon border adjustment mechanism (CBAM), a mechanism that would put a carbon levy on imports of certain emission intensive products from third countries into the EU. This is part of the 'Fit for 55' package, a group of 12 directives and regulations aiming to achieve 55% emissions reductions compared to 1990 levels.

The introduction of a CBAM was first presented by the European Commission as "an alternative to the measures that address the risk of carbon leakage[1] in the EU's Emissions Trading System"[2].

Different stakeholders, including policymakers in the European Commission and EU Member States, the European Parliament, industries, and EU's trade partners, hold different positions on what the CBAM should try to achieve. These competing views will be brought to bear in the legislative process to come and will impact the final design of the CBAM, which is due to be fully implemented by 2026 following a three-year transition phase beginning in 2023.

The CBAM, if implemented in its current proposed form, will raise the cost for EU importers of some Chinese goods to access the European market. But the overall impact is likely to be small as the current proposal only covers a small share of Chinese exports to the EU, and importers will recover most of the additional costs through higher prices in EU markets.

Key Findings:

- The EU's CBAM proposal comes at a time of increased international trade tensions, which the EU aims to tackle through a variety of trade policy instruments. Against the background of tightened EU scrutiny on foreign investment and trade, CBAM has been interpreted by some of the EU's trading partners as a tool to protect the single market disguised as climate policy. However, **the motivations of the EU's CBAM are multi-faceted.**
- **Different EU actors associate a range of different objectives with the CBAM.** Some European stakeholders see the CBAM as a way to prevent 'carbon leakage'; others see it as a way to drive climate ambition globally; a means to raise new revenues, by replacing the handing out of free allowances to EU industries under its emissions trading scheme (ETS); a way to raise the price of polluting products in the internal EU market to make less polluting products more competitive; others, especially some industry stakeholders, view the measure as a solution to address their competitiveness concerns linked to rising climate ambition in the EU.
- There are different design options for the CBAM. Choices include: the sectoral and emissions scope, compliance instruments, carbon content assessment, possible exemptions, the use of revenue and the treatment of the EU's exports regarding possible discounts on their carbon costs.

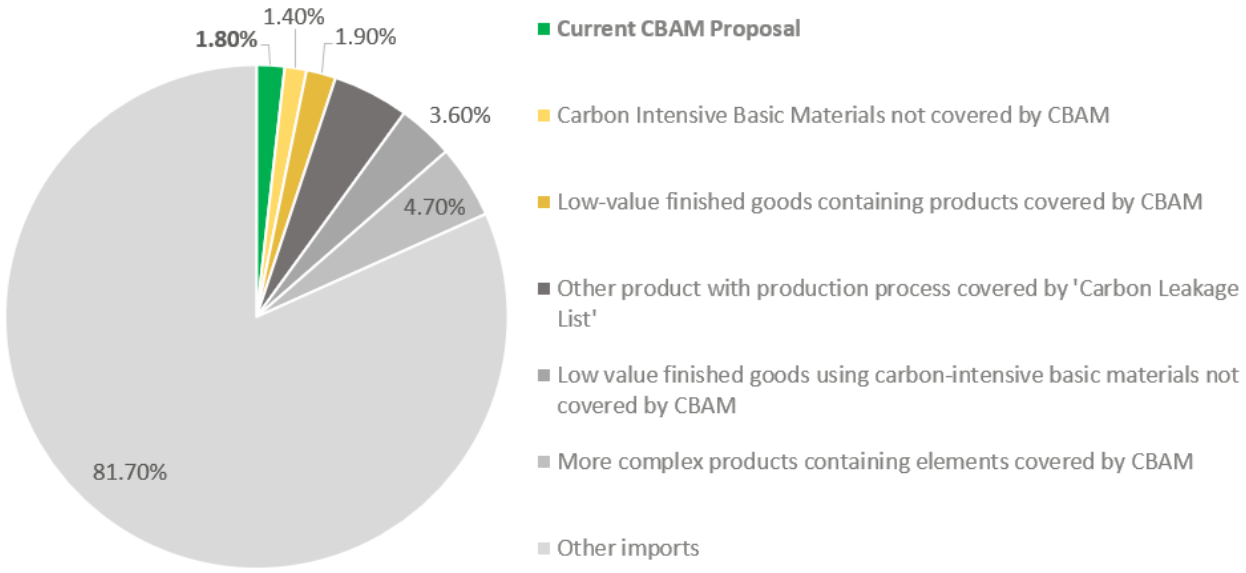
[1] Carbon leakage is the displacement of industrial production from a region with higher constraints on greenhouse gas emissions (GHG) to regions with lower constraints, which undermines the efficacy of the climate policies in the stricter region. The EU Emission Trading Scheme, which sets a price on GHG emissions for a number of economic sectors, currently shields its industries by giving them free emission allowances and, in some cases, compensating for their increased electricity costs caused by carbon pricing.

[2] Communication on the European Green Deal, European Commission, December 2019

However, no matter which design will be chosen for the final CBAM, the EU institutions have stressed the importance of compliance with WTO rules.

- **The current proposal envisions a narrow sectoral scope**, covering direct emissions only ("scope 1" emissions), with the possibility to submit verified calculations or use default values and with revenues envisioned for EU own resources without earmarking. A three-year trial period will exempt importers of any charge.
- The legislative timeline suggests that the **CBAM will come into force earliest in the beginning of 2023**, following scrutiny and political discussions by the European Parliament and the Council, with consultations by the European Commission with trade partners. The trial period will run between 2023-2025 during which importers would not face extra cost from the CBAM. **The full price signal of the CBAM will not be applied to importers of goods from the EU's trading partners until 2035 when free allocation is proposed to be fully phased out.**
- **The impact of the likely CBAM scenario on Chinese exports to the EU is minimal**. The sectors covered by the current CBAM proposal represented 1.8% of Chinese exports to Europe in 2019, in value. Potential extensions could increase that share to 5% in an extreme scenario.

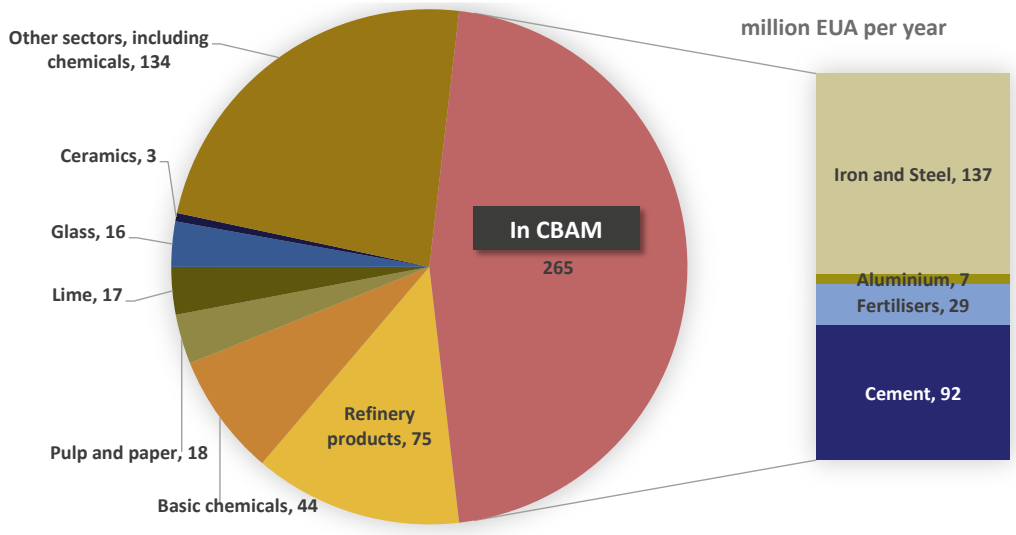
Amount of Chinese exports of goods to the EU27 in value covered by CBAM (2019)



- Despite its narrow coverage, introducing the CBAM could allow the EU to phase out the free allocation of 265m emission permits under its carbon market, worth €15.9bn, every year[3].

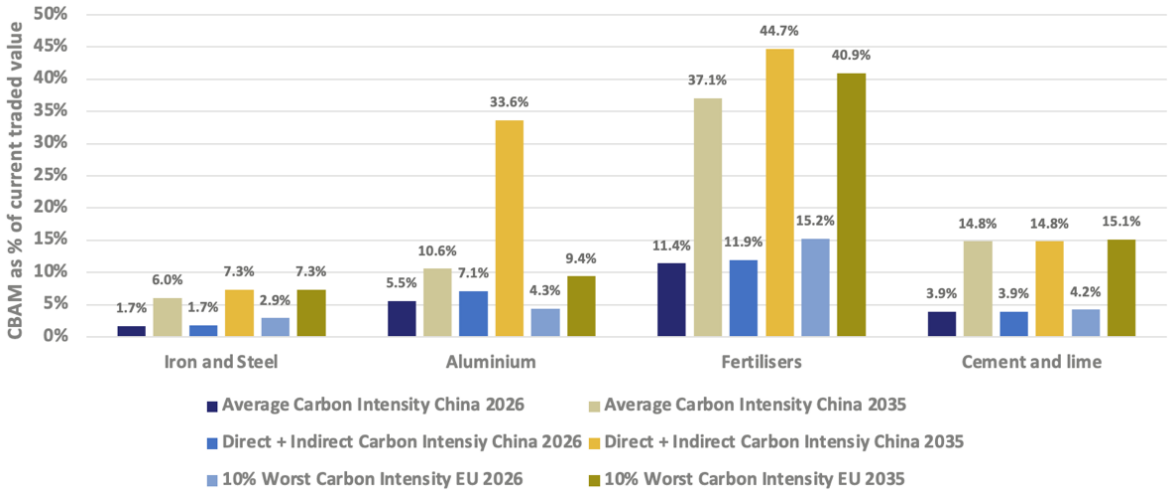
[3] Assuming €60 per emission allowance

Number of emission allowances distributed to industry for free in 2021



- The calculation methodology for embedded emissions has a relatively small effect on the impact of the proposed CBAM on goods imported from China, except for the inclusion or not of indirect emissions from electricity use in the aluminium sector.

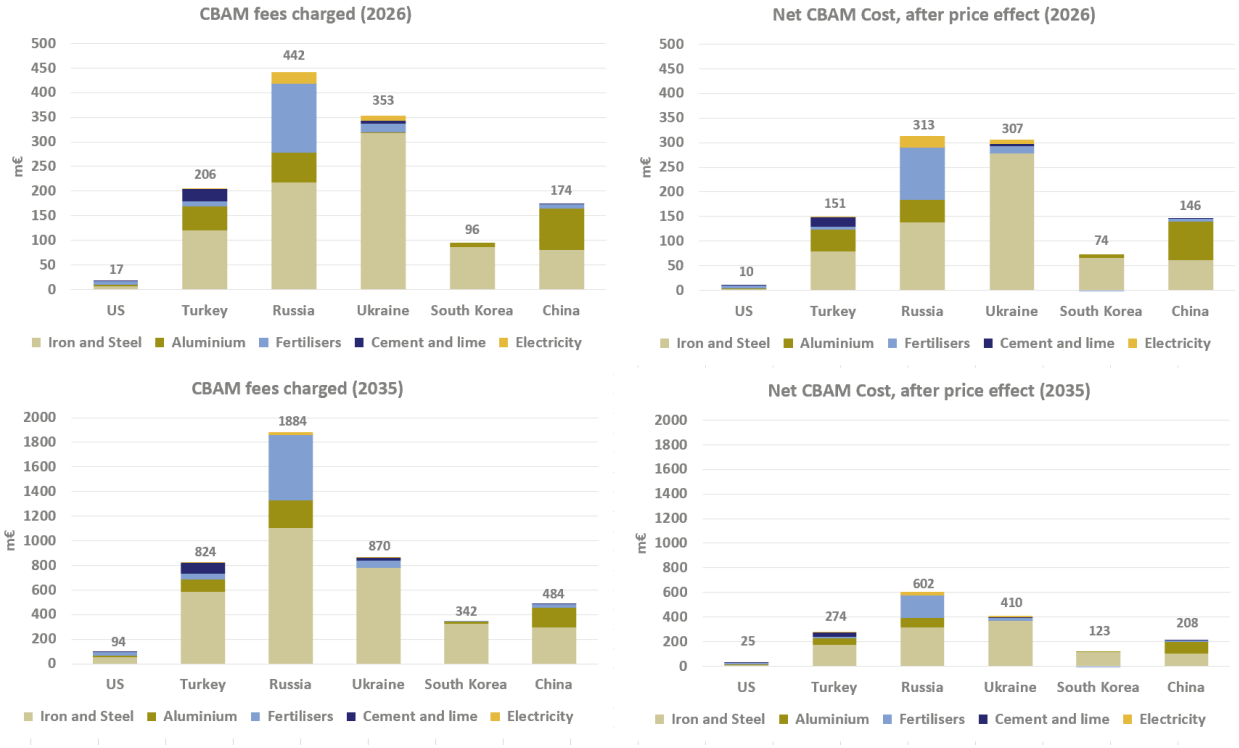
CBAM fees charged in 2026 and 2035



- The EU's top trading partners have been paying close attention to the CBAM conversation in Europe. Some partners are interested in exploring the feasibility of CBAMs, including the US and Canada, while other countries in the EU's neighbourhood and OECD countries are aiming to comply with a CBAM through exploring the development of domestic carbon pricing schemes. But many, particularly those in the developing world, are raising concerns on its design, fairness, and feasibility.
- **The new cost to EU and foreign industries will likely be passed on to the direct consumers of the products covered in the CBAM, so that part of the cost will be recovered by importers in the form of higher selling prices for their products. The overall net effect on importers is likely to be**

very small. The net CBAM cost for importers, which factors in the recovery through higher market prices is significantly lower than the CBAM fees. Overall, the total net CBAM cost should barely reach €1.0bn in 2026 and €1.6bn in 2035 across imports from six major trading partners.

Estimated 2026 & 2035 CBAM fees vs. Net cost to importers from European Trade Partners



- The CBAM mainly raises redistribution issues within the EU itself, as its introduction will raise revenues but its costs will largely be borne by consumers. It is also likely to raise opposition from the EU industries using the goods covered by the measure, which will likely become more expensive, although only marginally.
- Phasing out the free allocation of emission permits to industry is inevitable in the long run, as the EU reduces its cap on emissions. If the CBAM was not introduced, alternatives could include a combination of heavily subsidised decarbonisation efforts within the EU and the subsequent application of product requirements which would apply to imports as well as domestic production.
- To accelerate the uptake of low-carbon technologies to address the climate crisis amid geopolitical and trade tensions, countries would need to introduce a suite of measures beyond the CBAM, such as product requirements, environmental standards in government procurement schemes and regional trade agreements, to facilitate the trade of low-carbon technologies in order to meet climate goals while safeguarding national interests.

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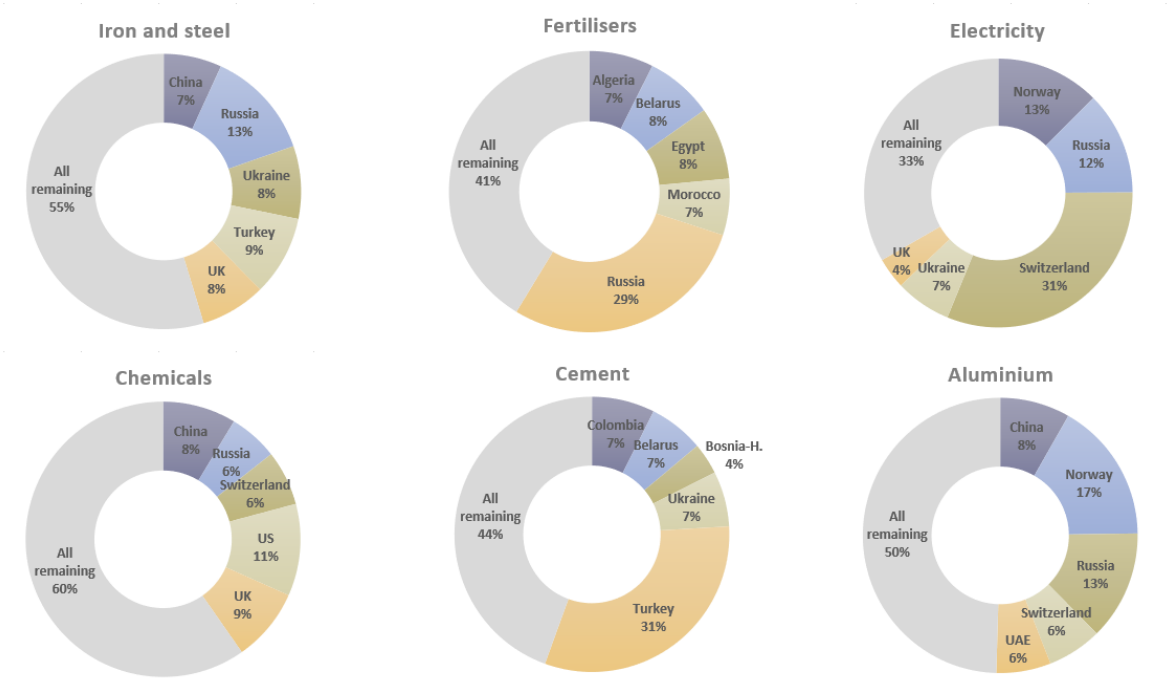
1. Context: Climate and Trade in EU-China Relations

Trade volumes

In 2020, China was the third largest exporter of goods to the EU (10.5%, EUR 383.4 billion) and the largest importer of EU goods (22.4%, EUR 202.6 billion).[4] In comparison, the trade volumes of products included in the current CBAM proposal (see Section 3) are rather low. While China was among the five largest exporters of aluminium (9%, EUR 1.6 billion) and iron and steel (8.2%, EUR 2.3 billion) in 2019, exports from China to the EU in the other targeted sectors were a relatively small fraction of the total (fertiliser 1%, EUR 78 million; electricity 0%; cement 2%, EUR 7.8 million – see Figure 1).[5] All of these sectors are subject to existing tariff and non-tariff barriers. Most products face a general import tariff, but there are also more hefty tariffs in the form of anti-dumping measures and countervailing measures.

Figure 1 Major exporters to the EU27 in 2019 - selected products



Source: Eurostat (2021)

EU's Trade & Investment Policy Toolbox

Over the past years, the EU has made increasing efforts to protect its strategic economic interests when it comes to foreign investments and access to the Single Market. In order to tackle unfair trade practices and restore a level playing field, the EU uses trade defence instruments to protect against dumped or subsidised imports. From 2010 to 2020, the amount of initiated cases has increased compared to the decade before and the number of anti-subsidy and anti-dumping measures in force is at its highest in the

[4] China-EU - international trade in goods statistics, Eurostat, March 2021
[5] EU trade since 1988 by CPA 2.1, Eurostat, January 2021

last ten years.[6] Moreover, in May 2021, the Commission proposed a new instrument to address potential distortive effects of foreign subsidies in the Single Market, which marks a key element of the updated EU Industrial Strategy.[7] In another measure to strengthen the EU's strategic autonomy, the European Commission is currently in the process of designing an anti-coercion instrument, which would empower the Commission to apply trade, investment or other restrictions towards any non-EU country unduly interfering in the policy choices of the EU or its Member States.[8] The EU foreign investment screening mechanism aims at a similar goal, establishing an EU-wide framework for coordination on foreign investments between the European Commission and the Member States.[9]

Against the background of rising EU's scrutiny on foreign investment and trade, CBAM has been interpreted by some of EU's trading partners as a tool that aims to protect the single market disguised as climate policy (to be discussed in Section 4). However, as we will explore in Section 3, the motivation of the EU's CBAM is multi-faceted.

Comprehensive Agreement on Investment

Trade relations between China and the EU have also been increasingly impacted by value-based differences. On 30 December 2020, the EU and China concluded in-principle the Comprehensive Agreement on Investment (CAI) following negotiations over seven years with 35 rounds of negotiations.[10] The agreement includes binding commitments on climate change as well as references to effectively implement the Paris Agreement. China committed, "in the areas of labour and environment, not to lower the standards of protection in order to attract investment, not to use labour and environment standards for protectionist purposes, as well as to respect its international obligations in the relevant treaties, which some hailed as significant concessions from China"[11].

However, the agreement was met with criticism from MEPs over the CAI's weak provisions around forced labour and China's commitment to the ratification of the outstanding International Labour Organisation's fundamental Conventions.[12] Following increased concerns over alleged human rights violations in Xinjiang, the European Council imposed sanctions on China in March, which were immediately met with countersanctions from the Chinese side against individual MEPs and several European organisations.[13] These countersanctions resulted in a decision by the European Parliament to freeze the negotiations on the CAI in May. While the legal scrubbing is still under way, a ratification in the beginning of next year as planned seems unlikely given the lack of political support from the European Parliament.[14]

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[6] Actions against imports into the EU, European Commission, February 2021

[7] Commission proposes new Regulation to address distortions by foreign subsidies in the Single Market, European Commission, May 2021

[8] Strengthening the EU's autonomy - Commission seeks input on a new anti-coercion instrument, European Commission, March 2021; Measured response: How to design a European instrument against economic coercion, European Council on Foreign Relations, June 2021

[9] EU foreign investment screening mechanism becomes fully operational, European Commission, October 2020

[10] EU and China reach agreement in principle on investment, European Commission, December 2020

[11] Key elements of the EU-China Comprehensive Agreement, European Commission, December 2020

[12] MEPs emerge as top hurdle to EU-China trade deal, POLITICO, January 2021

[13] EU imposes further sanctions over serious violations of human rights around the world, Council of the EU, March 2021; Foreign Ministry Spokesperson Announces Sanctions on Relevant EU Entities and Personnel, Ministry of Foreign Affairs of the People's Republic of China, March 2021

[14] European Parliament votes to 'freeze' investment deal until China lifts sanctions, POLITICO, May 2021

EU Trade Policy Review

The European Green Deal is increasingly mainstreamed across all policy areas, including trade. The recent EU Trade Policy Review aims to "promote greater sustainability in line with [the EU's] commitment of fully implementing the UN Sustainable Development Goals" and lists the green transition as one of its defining objectives. The Review emphasises the role trade policy plays in tackling environmental and social issues and links these to other sectors such as the EU's finance reform.[13]

The majority of recent EU trade agreements reference climate commitments, including the Paris Agreement and tackling deforestation. All foreign trade agreements with such an article include an explicit commitment by trade parties to climate change efforts, stating that "each party shall effectively implement" international climate agreements.[15] Since 2009, EU trade agreements have included a chapter dedicated to trade and sustainable development (i.e. the TSD Chapter), which has been revamped to become more effective in a 15-point plan in 2018.[16] However, the current form of trade agreements does not necessarily lead to an increase in the level of compliance with climate commitments. The EU-UK Trade and Cooperation Agreement is the first of its kind to make climate change an essential element. Both parties are required to "respect the Paris Agreement and the process set up by the UNFCCC and refrain from acts or omissions that would materially defeat the object and purpose of the Paris Agreement."[17]

Box 1: The European Green Deal

The European Green Deal is a flagship project of the current European Commission. When Ursula Von der Leyen was appointed European Commission President in 2019, an ambitious new direction for the bloc's climate policy was a prerequisite for her to win the approval of the European Parliament. Within 100 days of taking office, the new Commission President launched the European Green Deal on 11 December 2019, calling it Europe's "man on the moon moment". The European Green Deal is a legislative agenda covering energy, industry, agriculture, biodiversity, circularity, waste and social policies, and is underpinned by the EU's ambition to achieve net-zero carbon emissions by 2050. The new 2050 target, and the accompanying target of net CO2 emission reductions of 55% by 2030, necessitates a range of new policies to enable a fast-paced decarbonisation.

2. Overview of EU's CBAM Proposal

2.1. The history of CBAM in the EU

Proposals for a Carbon Border Adjustment Mechanism have accompanied the EU's efforts at greater climate ambition. The principal motivations for the CBAM are to prevent 'carbon leakage' (the relocation overseas of EU industries) while the EU increases its ambition, to encourage decarbonisation and climate policies outside the EU and to improve the EU's domestic climate policies.

Origins of the CBAM: the EU ETS

The proposal for a CBAM arises out of the EU's Emissions Trading System (EU ETS). One of the world's largest carbon markets, the EU ETS covers emissions from the power and heat, industry and aviation

[15] Environmental credentials of EU trade policy, Institute for European Environmental Policy, April 2021
[16] Commissioner Malmström unveils 15-point plan to make EU trade and sustainable development chapters more effective, European Commission, February 2018
[17] The EU-UK agreement is the first to make climate a make-or-break issue, The UK in a changing Europe, January 2021

sectors, requiring that emitting installations and airlines surrender emission allowances (EUAs) equivalent to their annual emissions of carbon dioxide, nitrous oxide and perfluorocarbons, while decreasing the amount of permits available each year. Installations source these EUAs either by purchasing them at auctions or, in the case of industrial actors and airlines, may receive free allowances covering an often very large share of their emissions.

The free allocation of allowances was a response to the risk of carbon leakage – the displacement of emissions from jurisdictions with more to less stringent climate policies, through the displacement of production, investments or fossil fuel consumption.[18] The hypothetical risk of carbon leakage is well-documented through ex-ante economic modelling exercises, but ex-post evidence has so far been limited.[19] Admittedly, the fact that little carbon leakage is observed in practice could be explained by a number of factors, including that free allocation has been effective, variations in carbon prices so far have been small or the impact of other factors (e.g. transportation, labour, resources) outweighing leakage effects.

Indeed, while in the past, the ETS carbon price has been low and ineffective, ranging from €3-€8 since 2012, it has risen substantially since the 2018 revision and as market participants anticipated an increase in ambition in the July 2021 proposal. On 1 July 2021, prices surged to a record €58.6 per tonne of CO2. A high carbon price means that European producers face higher costs than their competitors elsewhere, leading to renewed and increased concerns over carbon leakage. For example, at a carbon price of €50/tCO2, the increase in costs per tonne of products like cement, chemicals and crude iron and steel ranges from 200-250% per unit of profit margins.[20] Initially, allowances were allocated for free to the majority of installations covered under the EU ETS. Since 2013, with a few exceptions, installations in the power sector have not received free allocation. Industry actors and airlines, however, continue to benefit from free allocation. 95% of industrial emissions were covered by freely granted allowances in 2020[21]. While the level of free allocation granted to industry declines by a small percentage every 5 years, the current legislation on free allocation is not in line with the EU's 2050 climate neutrality commitment[22].

While free allocation could continue to shield sectors at risk of carbon leakage against most carbon costs, the quantity of free allowances available to sectors at risk of carbon leakage will decrease. In practice, this rule almost acts as an 'expiry date' to free allocation, as it is expected that insufficient free allowances will be available to meet the demand by the late 20s.[23]

In addition, free allocation diminishes the decarbonisation incentive of the EU ETS, as industrial actors only pay for a small proportion of their full carbon costs. **The free allocation system supports high-carbon incumbent installations at the expense of lower-carbon competitors**, as low-carbon alternative technologies and products are often excluded or treated differently. This means that there is less incentive for industries to use more carbon-efficient production methods, defeating one of the main aims of the EU ETS[24]. For this reason, the free allocation system has been facing increasing criticism, from the European

[18] Carbon Leakage: Theory, Evidence and Policy Design, Partnership for Market Readiness, October 2015
[19] A European carbon border tax: much pain, little gain, Bruegel, March 2020
[20] Fostering climate-neutral, energy-intensive industries in Europe: A policy vision for the EU Industrial Strategy, E3G, February 2020
[21] Sandbag calculations based on 2020 Verified Emissions Data, European Union Transaction Log.
[22] Benchmarks and Free Allocation: Details reveal problems in the EU ETS, Sandbag, January 2021.
[23] A Clean Industry Package for the EU, Agora Energiewende, October 2020
[24] See e.g. Untangling the knots – Clearing the way to fast green hydrogen deployment, Sandbag, June 2021; Barriers to Industrial Decarbonisation, May 2018; Industrial Transformation 2050 - Towards an Industrial strategy for a Climate Neutral Europe, Institute for European Studies, 2019

Court of Auditors[25], certain EU governments, members of the European Parliament, civil society organisations and even some industry actors pioneering low-carbon production techniques.

CBAM: the alternative to free allocation

Against this backdrop, **CBAM has emerged as an alternative to free allocation - a means of carbon leakage protection** which seeks to increase the carbon costs of imports while also increasing the carbon costs of domestic producers. This is not the first time a carbon border adjustment has been proposed in the context of the EU ETS. In 2007, the European Commission made an informal proposal for an adjustment mechanism, called an "allowance import requirement"[26]. This was however rejected in favour of the continuation of free allocation for energy-intensive industries. In 2009, the French government put forward a non-paper proposing a "carbon inclusion mechanism", but no formal legislative proposal was made. Another 2016 proposal by the French government sought to implement an emissions pricing mechanism, specifically for cement imports, to replace free allocation for European cement producers. While this proposal received some support in the European Parliament, it was ultimately rejected in favour of maintaining free allowances[27].

A number of arguments against the CBAM previously proposed were raised. Firstly, a perceived lack of legal basis. The measure was not seen as compatible with WTO rules and was perceived as a form of economic protectionism. Secondly, fear of retaliation, of the kind following the attempted (and failed) inclusion of external flights into the EU ETS in 2012. Thirdly, administrative difficulties in handling carbon accounting, registration of importers etc. Lastly, industry actors were reluctant to lose their free allocation, a system with which they are familiar and from which many had benefitted substantially.

However, recent developments in EU climate policy have not only put the CBAM back on the table but have also propelled it to a central position in the EU's legislative framework for climate action. **The change in the CBAM's fortunes can be explained in the context of the European Green Deal**. Existing climate policy legislation, such as the EU ETS Directive, is brought in line with higher targets, which is likely to result in higher carbon prices and to increase the threat of carbon leakage. The draft of this new and updated legislation, dubbed the 'Fit for 55 Package', was presented by the European Commission in July 2021, including the CBAM proposal.

The EU's motivation

In her political guidelines for the next European Commission 2019-2024[28], Ursula von der Leyen's first priority was the introduction of a European Green Deal, aimed at making Europe the first climate-neutral continent. To complement this ambition, the text reads, she would introduce a Carbon Border Tax to **avoid carbon leakage and create a level-playing field**. The European Green Deal[29] includes similar language: "Should differences in levels of ambition worldwide persist, as the EU increases its climate ambition, the Commission will propose a carbon border adjustment mechanism, for selected sectors, to reduce the risk of carbon leakage". The CBAM would also be designed to comply with WTO rules and be an alternative to existing measures that address the risk of carbon leakage in the EU ETS.

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[25] The EU's Emissions Trading System: free allocation of allowances needed better targeting, European Court of Auditors, September 2020

[26] Draft Commission Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC, European Commission, December 2007.

[27] Greening EU Trade 3: A European Border Carbon Adjustment Proposal, Europe Jaques Delors, June 2020

[28] A Union that strives for more - My agenda for Europe, Ursula von der Leyen, July 2019

[29] Communication on the European Green Deal, European Commission, December 2019

The new climate policy momentum, as well as the heritage of the EU ETS, provide the many and occasionally contradictory motivations for the EU ETS. Many actors see the CBAM as a means to incentivise greater climate ambition globally. However, as this motivation has drawn accusations of disregard for the principle of 'Common But Differentiated Responsibilities', other Responsibilities and Respective Capabilities (CBDR&RC).

Some stakeholders put forward the necessary replacement of the current protections against carbon leakage due to their distortive effect on competition in favour of **high-carbon incumbent technologies at the expense of lower-carbon competitors**, undermining the environmental effectiveness of carbon pricing within the EU.

Other stakeholders hold that the primary motivation for the CBAM is in fact to increase domestic climate ambition within the EU, offering the CBAM to heavy industries in exchange for greater emission reductions on their part. This feeds into another motivation of the CBAM: to protect heavy industries from carbon leakage. Many industry actors display this protectionist motivation for the CBAM, often calling for the CBAM to be implemented alongside existing carbon leakage measures. This departure from climate-related reasons is also present in the final major motivation for the CBAM: revenue-raising. In December 2020, the EU Institutions agreed that the revenues from the CBAM will be used as an EU 'own resource', that is, as one of the financing sources of the EU's budget[30]. As part of its Covid-19 Recovery Plan, the EU will borrow EUR 750 billion. Thus, new own resources are needed to cover this debt. This objective has also led to strong opposition from trade partners.

Most stakeholders who support introducing an EU CBAM will do so for a mix of these different motivations. There has also been commentary that, whatever the underlying motivation for the CBAM, it is only internationally justifiable in the name of action against climate change. For this reason, there have been calls for policy choices on the CBAM to be based on climate action motivations, and not other economic reasons[31].

2.2. Policy options for the CBAM

There are a range of different policy options that have been put forward by different stakeholders. These options deal with the coverage and scope of the CBAM, the type of compliance instrument which could be introduced, the method for assessing the carbon content in products, exemption options, as well as with how the CBAM will interact with other EU climate policies and international trade law. This section explores all policy options on the table and the elements in the Commission's current proposal, released on 14th July 2021.

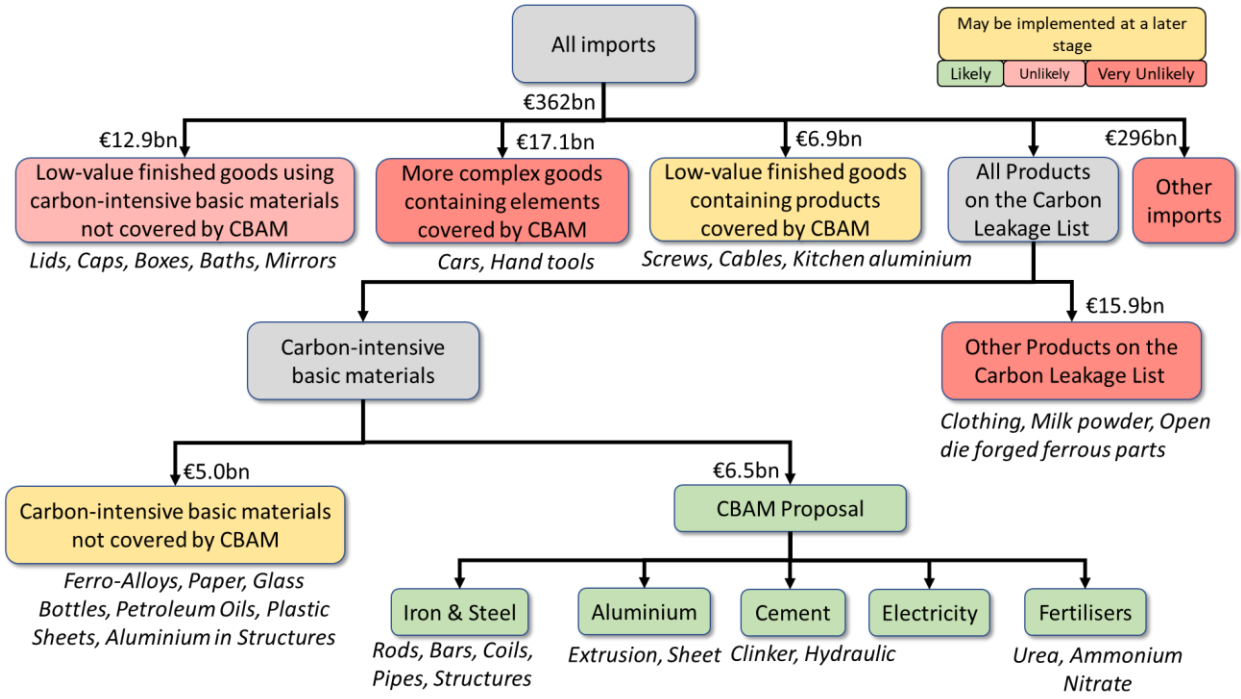
Sectors

One of the main factors that will determine the impact of the CBAM on the EU's trading partners will be its sectoral coverage. In the table are several options that have been put forward by different actors. The "narrow" and "medium" options would cover sectors within the current EU ETS.

[30] Interinstitutional Agreement of 16 December 2020 between the European Parliament, the Council of the European Union and the European Commission on budgetary discipline, on cooperation in budgetary matters and on sound financial management, as well as on new own resources, including a roadmap towards the introduction of new own resources, European Institutions, December 2020

[31] Debate in the Environment Committee of the European Parliament on the Carbon Border Adjustment Mechanism, 9 Dec 2020.

Figure 2 Possible sectoral coverage of the CBAM



Source: Sandbag, using Comext database

Current Proposal	
Narrow • Electricity, all iron and steel products (flat, bars, rods, wire etc.) except scrap and ferro-alloy, some articles of steel (tubes, railways, containers, structures); some aluminium products and articles (e.g. bars, rods, pipes), cement products (clinker, portland cement), fertiliser-related product types (e.g. ammonia, ammonium nitrate, anhydrous ammonia, nitric acid, urea) • Before the end of the transitional period (2023-2025) the European Commission will report back to the European Parliament and Council and may make a proposal to extend the CBAM to other goods and other emissions (e.g. indirect emissions from electricity use)	
Options	
Narrow: Emissions-intensive basic materials (and electricity)	• Could include steel, cement, glass, paper & pulp, ceramics, aluminium, chemicals • Relatively simple to implement, except for chemicals • Concerns that products using these basic materials manufactured in the EU would become more expensive and experience carbon leakage.
Medium: Products on the Carbon Leakage List	• Carbon Leakage List[32] already established by European Commission • Includes emissions-intensive basic materials and other less-emitting sectors e.g. clothing • Carbon Leakage risk is calculated based on a sector's emissions intensity and trade intensity

[32] Carbon Leakage List 2021 - 2030, European Commission, February 2019

Wide: Manufactured products containing emissions-intensive basic materials	• CBAM price per product to be based on sum of carbon intensities of constituent basic materials • Administratively complex but offers more comprehensive incentive to trade partners to reduce emissions • Could be introduced as in later phases of the CBAM
All imports	• Would be highly administratively complex • May not match the carbon costs borne by EU producers • Proposed by certain political groups in the European Parliament but no majority support

Emissions Scope

The emissions scope concerns the type of emissions and type of greenhouse gases covered. In emissions accounting, there are three main types of emissions: scope 1 – direct emissions, either from combustion of fossil fuel or activities that emit greenhouse gases in the production process and upstream activities (e.g. raw material extraction); scope 2 – indirect emissions through the use of electricity; and scope 3 – value chain emissions, from activities that are embedded in transportation and downstream activities (e.g. use, end of life).

Current Proposal	
• Types of greenhouse gases covered: CO2, N2O, PFCs • CBAM will initially apply to direct emissions (scope 1) of those greenhouse gases from the production of goods to be imported into the EU. After the end of a transition period and upon further assessment, the CBAM might also be applied to indirect emissions. • Includes embedded emissions from all upstream processes (including those for producing input materials), however scrap metal is excluded.	
Options	
Scope 1 Emissions Only	• Allows for the imposition on importers of the carbon costs faced by EU producers • This option was not commonly promoted by stakeholders before the Commission's proposal
Scope 1 and 2 Emissions	• In its own initiative report, the European Parliament proposed to cover both direct and indirect emissions • Covering indirect emissions attempts to reflect the carbon price which is passed on to EU producers who consume electricity. • Would allow to phase out state aid to EU facilities as compensation for carbon costs from electricity use, as well as free allocation. However, this seems unlikely as no corresponding provision was proposed in the EU ETS directive for the phasing out of this state aid.
Scope 1, 2 and 3 Emissions	• Proposed by certain political groups in the European Parliament but does not have majority support • May not match the carbon costs borne by EU producers

It should be noted that the case of hydrogen as an input fuel is not mentioned explicitly by the proposed CBAM regulation. It is not clear whether emissions from the production of hydrogen will be counted or not in products' embedded emissions.

Compliance instrument

There are different ways in which the price adjustment is applied to importers into the EU, either through applying a fee to imports or extension of the EU ETS.

Current Proposal
• The EU ETS is not extended to imports • Importers into EU have to purchase certificates and surrender by May of each year an number of certificates equal to the embedded emissions of their imports the year before • Price of certificates is equal to the average EU ETS auction price from the week before • Each Member State shall designate a competent CBAM authority to manage the administrative aspects
Options
• Direct border levy when products enter the single market • Obligation for importers into the EU to purchase emissions credits and surrender them – either through an extension of the EU ETS to cover importers or a notional ETS for importers only (without a cap)

Carbon content assessment

Product carbon content data may be required for a CBAM's implementation. Currently, the carbon content of imports is not monitored. A default value of carbon could be applied if the carbon content of imported products is not available.

Current Proposal

For products:
• Actual direct embedded emissions will be used to determine the CBAM fee.
• If actual monitoring data (verified by an accredited verifier) are not provided, one of two default values will be applied:
  ○ The average emission intensity of each exporting country and for each of the goods subject to CBAM, increased by a mark-up; OR
  ○ When no reliable data is available for the exporting country or type of good, a default value equal to the average emission intensity of the 10 per cent worst performing EU installations for that type of good shall be used.
For electricity:
• A default value will apply equal to the average CO2 emission factor (= weighted average of the CO2 intensity of electricity produced from fossil fuels) in a third country, group of third countries or region within a third country; OR
• When no specific default value can be determined, the default value shall represent the CO2 emission factor in the EU.

Options
• Default value defined based on best/worst/average producers in the EU • Default value defined based on best/worst/average producers in origin country • Default value defined based on average producers globally • Actual embedded emissions

Our understanding of the current proposal is that foreign plants have the possibility (but not the obligation) to register with a CBAM authority and get their data verified. We presume that only the least

emission-intensive plants are likely to do so, while the others are assigned default intensity values, thereby justifying the applied mark-up over the country average.

Exemptions

While any kind of exemptions are legally problematic under the most-favoured-nation (MFN) principle contained in General Agreement on Tariffs and Trade (GATT) Article I, a range of possible exemptions have been discussed in the context of CBAM. Indeed, exemptions might even improve the prospects of a CBAM being in compliance with WTO law if those exemptions are not arbitrary, unjustifiably discriminate between countries and contribute to the achievement of one of the legitimate objectives contained in GATT Article XX. In the case of CBAM, this would be exemptions on environmental grounds, namely considering the climate policy ambition of the country from which the exporter originates. For example, exporters from countries with a domestic carbon price or similarly ambitious climate policies as the EU in place could potentially be exempt from the border levy or have the levy reduced.

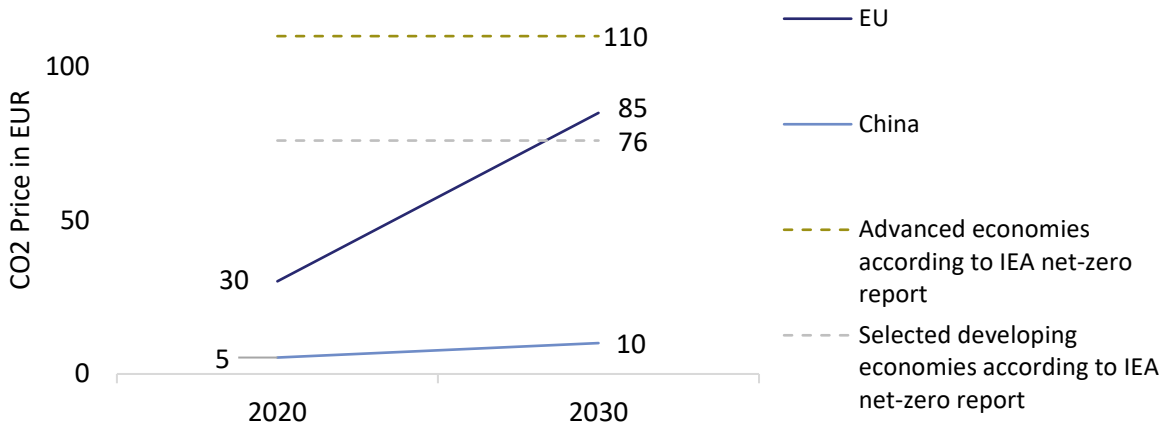
A second type of exemptions that can be considered would aim for the CBAM to align with the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR&RC), which is a core aspect of the UNFCCC regime. This principle, as well as the Special and Differential Treatment (SDT) provisions of the WTO regime, could be arguments to exempt low-income countries such as the group of Least-Developed Countries (LDCs) from the CBAM. Exemptions based on this principle can be implemented in the EU through existing unilateral preference scheme such as the Generalised Scheme of Preferences (GSP) or GSP+, which partially remove tariffs and provides trade benefits if certain conditions are met for LDCs. While such schemes may facilitate carbon leakage, the risks are minimal. For instance, imports of aluminium from LDCs accounts for <4% of EU's total import; for iron and steel the figure is <1%[33].

While either type of exemption could be considered by the EU (e.g. for political reasons), applying the CBAM to all countries without any exceptions would theoretically result in the strongest case under international trade law.

Current Proposal
• Only countries linked to or part of the EU ETS are automatically exempted • Carbon pricing policies in other countries are taken into account (the amount of CBAM certificates that have to be surrendered will be adjusted by the carbon price paid in country of origin) • Non-pricing policies not taken into account, but agreements with third countries *could* be considered as an alternative to the application of CBAM in case they ensure a higher degree of effectiveness and ambition to achieve decarbonisation of a sector • No exemptions for Least Developed Countries
Options
• Some countries (e.g. Least Developed Countries) are not subjected to a CBAM, regardless of their climate policies • The carbon price paid domestically in the country of origin is subtracted from the border adjustment fee applied in the EU • Take into account climate policies other than the carbon price paid in assessing exemption or reduction in the border fee

[33] The EU's carbon border adjustment mechanism: How to make it work for developing countries, Centre for European Reform, April 2021

Figure 3 Current and expected carbon prices in the EU and China (in EUR)



The EU average CO2 price in the last two years (July 2019 – June 2021) was EUR 30.17 (while it has been above and is expected by the European Commission, in some scenarios, to rise to between EUR 56 to EUR 85 by 2030).[34] As the Chinese national ETS was launched on 16 July, Chinese CO2 prices are based on expectations for the specific year according to China Carbon.[35] Prices are converted into EUR based on EUR 1 = RMB 7.66 = USD 1.18. Recommended carbon prices are based on the IEA's net zero report.[36]

Use of revenue

The European Commission's Next Generation EU proposal lists the CBAM as one of the possible so-called 'own resources' that will allow the Commission to repay higher borrowing to respond to the crisis. This proposal is likely to raise legal and political challenges. Some suggest that revenues should be used for domestic climate purposes while others argue for earmarking revenues for international climate funds or for disbursing revenues to third countries to clearly position the CBAM as a non-protectionist measure and to garner support among international partners[37].

Current Proposal
• Commission own resource without earmarking
Options
• Commission own resource without earmarking • Commission own resource, revenues recycled for domestic climate mitigation purposes • Commission own resource, revenues recycled for international climate mitigation/adaptation and/or technical assistance • Member State budgets

Treatment of EU's exports

Another key design question for the EU CBAM relates to whether it will cover exports or not. In order to protect EU producers against the risk of carbon leakage when they compete on foreign markets, an export

[34] EUA Futures, ICE, June 2021; Europe CO2 Prices May Rise More Than 50% by 2030, EU Draft Shows, Bloomberg, June 2021
[35] 2020 China Carbon Pricing Survey, China Carbon, December 2020
[36] Net Zero by 2050 - A roadmap for the global energy sector, IEA, May 2021
[37] Developing guidance for implementing border carbon adjusments: Lessons, cautions, and research needs from the literature, Review of Environmental Economics and Policy, 2019; Recovery plan for Europe, European Commission, June 2021

rebate could be provided by the EU. While this would indeed ensure that carbon leakage is avoided both within the EU as outside, it would decrease the CBAM's environmental effectiveness and could result in resource shuffling by EU producers (as they might export their most carbon-intensive products). Moreover, providing a rebate for exports greatly increases the risk of it being classified as a prohibited export subsidy under the WTO's Agreement on Subsidies and Countervailing Measures.[38] The EU's current proposal does not mention export rebates, which reduces the risks of a WTO dispute over export subsidy but is expected to provoke a lot of pushback from European industry stakeholders.

Current Proposal	
• Export rebates are not mentioned	
Options	
EU exports unaffected by CBAM	• This option is seen to pose less problems for WTO compatibility • Many EU producers are opposed to this as it would mean that EU exporter who pay carbon costs would be at a competitive disadvantage to their trade competitors on international markets
Extension to exports	• EU producers exporting outside the EU would receive an export rebate • Considered necessary by many actors as EU exporters bear carbon costs that their competitors on international markets do not • Legal concerns over whether this would be considered a subsidy under WTO rules • Advantages carbon-intensive exports over low-carbon alternatives • Could lead to resource shuffling if EU producers export most carbon-intensive products and keep cleaner products for the EU market

Initial transitional period

The three year "transition phase" (2023-2025) included in the CBAM proposal will be a proper pilot phase, during which importers will not be charged but will instead be asked to report on embedded emissions of their imports. This change from previous draft proposals gives trade partners time to adjust, initiate data collection and develop methods for calculating embedded emissions.

Further, it is foreseen that the transition from the current carbon leakage protection (free allocation) to the CBAM will be gradual, meaning that initially a part of the free allocation for domestic producers is maintained. The amount of free allocation that is maintained will be deducted from the CBAM fee that declarants importing goods into the EU have to pay, meaning that the CBAM costs will be lower. The proposal confirms a gradual transition from free allowances to CBAM after the pilot phase over a 10-year time period, 2026-2035. Free allowances will go down by 10 percentage points each year.

[38] Can Emissions Trading Schemes be Coupled with Border Tax Adjustments? An Analysis vis-à-vis WTO Law, Review of European Community and International Environmental Law, 2006

2.3. Compatibility with WTO Agreements

Since the EU's CBAM plan was first announced, the EU institutions have stressed the importance of compliance with WTO rules. Legal scholars have argued that it is possible to design a mechanism that would be compatible with WTO rules[39]. To do so, the CBAM must follow certain criteria:

1. No discrimination against importers

Article III of the GATT prohibits discrimination between imports and domestic production. Imports cannot be subject to a charge to which domestic producers are not. However, states do have a right to impose a border charge equivalent to taxes or charges paid by domestic producers. This has several implications for the design of the CBAM:

- The CBAM price must follow, as closely as possible, the carbon price of the EU ETS
- Importers cannot be charged a CBAM on the full extent of their emissions if domestic producers are still receiving some of their emission allowances for free. Either free allocation must be removed as the CBAM is introduced, or the CBAM can only apply on emissions above the level of the free allocation benchmark.

2. No unequal treatment of importers from particular countries

Under WTO rules, the MFN principle means that a tariff should not privilege or disadvantage importers from a particular country.

- If a default emissions intensity value is used for calculating the CBAM price, it should be either the global or the EU average emissions intensity. If different emission intensity values were used for different countries of origin, this could be perceived as discrimination as different CBAM prices would be charged solely on the basis of country of origin of the products.
- However, different CBAM prices could be charged depending on the origin of a product, if a carbon price had already been paid on that product in its country of origin. Any such equivalence provisions would have to be well implemented to ensure that no country's carbon pricing scheme would be overlooked.

3. Direct tax on like products

Articles II and III of the GATT permit the replication of domestic charges for imports, stating that the tax or charge should be direct; that is, it is charged on the imported products and not the wealth or income of the importer. It should be charged on "like products", that is, products that have similar characteristics, end uses, product classifications and consumer perceptions to domestically produced products.

- The CBAM should be charged according to the products imported, for example by weight.
- The "like products" requirement would mean that the CBAM should only be charged on goods also produced in the EU (which in any case matches with the aim of the instrument to protect against carbon leakage).

[39] Changing Climate for Carbon Taxes: Who's Afraid of the WTO?, The Climate Advisors, 2013; Greening EU Trade 3: A European Border Carbon Adjustment Proposal, Europe Jaques Delors, June 2020

While the CBAM could be justified under articles II and III of the GATT alone[40], Article XX of the GATT also provides justification for such a measure. Article XX states "Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures" and lists a range of circumstances under which trade restrictions could be justified, including:

- (b) necessary to protect human, animal or plant life or health;
- (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

Both these circumstances can be tied to environmental or climate measures such as the CBAM. However, the most important part of this Article is still the chapeau, i.e. measures for climate or environmental protection must not constitute discrimination between different countries or disguise a barrier to international trade[41].

Therefore, it is key that the CBAM is not perceived as a protectionist measure, either by trading partners or by the Appellate Body of the WTO. Several factors that could affect this perception are:

- Equivalence provisions: As the aim of the CBAM is to prevent carbon leakage by ensuring that importers pay a price on the carbon content of their goods, it is coherent that the carbon pricing policies of other countries are taken into account. If an exporter has paid a carbon price or tax in the country of origin of the good, this already paid carbon price should be discounted from the CBAM price.
- Use of revenues: If the revenues from the CBAM are used entirely as a source of EU income, this could enhance the perception that the CBAM is a protectionist measure. This could be alleviated by channeling (some of) the revenues specifically to decarbonisation investments within the EU, or towards international climate finance.
- Price calculation based on real emissions: The fairest implementation of the CBAM would allow importers to prove that the carbon intensity of their products is less than the default value, and to face a lower CBAM price accordingly. However, this would be administratively challenging as it would require a reporting and verification system in line with EU standards.

The EU's CBAM plans have already been discussed at WTO level during the June 2020 meeting of the Council for Trade in Goods. Russia, supported by China, Paraguay, Uruguay and the US sought assurances from the EU that the CBAM would be consistent with WTO rules, and asked for more details of affected sectors and timelines[42].

The EC's proposed CBAM regulation seems to broadly meet the criteria listed under points 1, 2 and 3 for compliance with articles II and III, with a few caveats:

1. It ensures that the CBAM follows the price of EU allowances closely and is discounted by the amount of free allocation for each product type. However, the provision to increase its

[40] Changing Climate for Carbon Taxes: Who's Afraid of the WTO?, The Climate Advisors, 2013; Debate in the Environment Committee of the European Parliament on the Carbon Border Adjustment Mechanism, Dec 2020
[41] General Agreement on Tariffs and Trade, WTO, 1947
[42] Goods Council considers EU plans for carbon taxes on certain imports, WTO, 2020

coverage to indirect emissions for electricity use is not matched by equivalent provisions to reduce the compensation received by EU firms at Member State level.

2. Different treatments with regards to countries of origin depend on whether a carbon price has been paid. However, default carbon intensity values, based on the country of origin, might fail point 2.
3. The CBAM is charged by weight of product (or MWh), only on products also produced in the EU, which is in line with point 3.

Regarding Article XX, equivalence provisions based on carbon pricing in the country of origin, and the option to let importers prove the carbon intensity of their goods based on verified emissions meet two of the criteria listed in the above bullet-points. Regarding use of revenue, the fact that the CBAM proceeds will all be kept by the EU might be perceived negatively, although this is not strictly a reason for incompliance. That argument could even be contradicted by the net balance of the CBAM for importers, which might not even be negative for them as they benefit from higher prices on EU markets, and some non-EU manufacturers of finished products might gain in competitiveness.

Making the CBAM WTO-compatible

It is a stated goal that the CBAM should be compatible with the WTO rules, to maintain good relations with trade partners and to avoid retaliatory measures. Table 1 discusses the main policy options for the CBAM which could make or break its case for WTO compatibility.

Table 1 Design elements to align the EU's CBAM with WTO rules

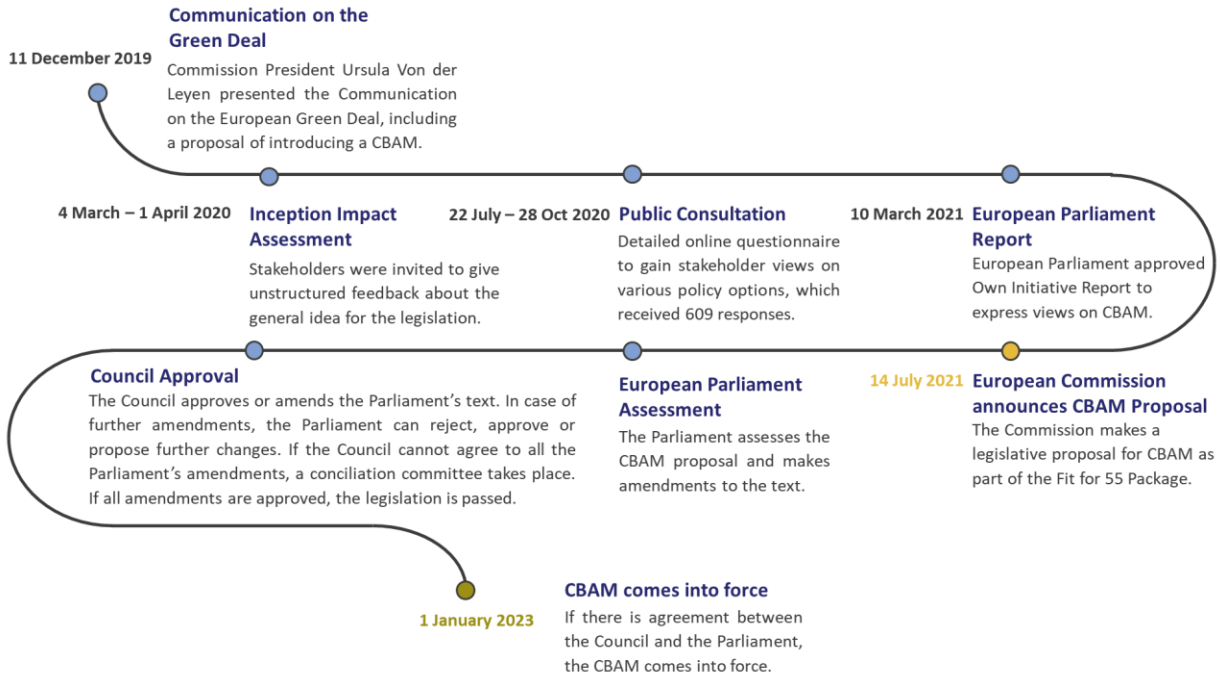
Treatment of Free Allocation	
The CBAM replaces free allocation as a means of carbon leakage protection	• This measure is considered to be the most compatible with WTO rules as both domestic producers and importers would be exposed to the full carbon cost of their products
Free allocation exists alongside the CBAM	• This is unlikely to be compatible with WTO rules, as the CBAM would impose a carbon cost on importers, while free allocation would shield domestic producers from this cost, thereby creating a "double protection" for EU producers. Article III of the GATT prohibits such discrimination between imports and domestic products. • This measure still receives support from industries and their political allies who fear that the CBAM will bring less benefits to heavy industries than free allocation.
Free allocation covers a certain level of emissions, CBAM applies only to emissions above this level	• This measure is presented as a more WTO-compatible way to retain free allocation. • As a short-term measure, this could be a means to gradually phase in a CBAM/ phase out free allocations. However, some actors see this as a long-term fix.
Equivalence measures	
No equivalence	• No consideration of climate policies in countries of origin of products • Considered less WTO-compatible

The CBAM price takes into account carbon price already paid by importers in other jurisdictions	• Importers from countries with an existing emissions trading scheme or carbon price would only pay the difference between that carbon price and the EU ETS price. • This should also take into account free allocation or other subsidy measures in place in importing countries. • This could become complex if products traverse several countries along their value chain. • This measure would improve the acceptability of the CBAM measure and incentivise trade partners to introduce carbon pricing schemes.
CBAM price takes into account other policies than carbon price as well	• This might improve the acceptability of the CBAM to some trading partners, but might open the door to more challenges
Use of CBAM revenues	
CBAM revenues are used as revenue for the EU or individual Member States	• This option is perceived poorly internationally, as it makes the CBAM seem like a protectionist, revenue-raising measure. • It could lead to increased opposition and challenges to the CBAM. • This option is supported by the EU Member States and institutions.
CBAM revenues are used to finance climate action within the EU	• This option could improve the perception of the CBAM as being primarily motivated by climate goals. • This could include funding industrial decarbonisation • If the CBAM is challenged under WTO rules, this would improve the perception of the CBAM, which could advantage the outcome of the challenge in favour of the EU.
CBAM revenues go towards international climate finance	• This option could greatly enhance perceptions of the CBAM internationally, as revenues from the CBAM would help trade partners reduce the carbon intensity of their production, and thereby reduce the costs to be paid under the CBAM. • This option could reduce the risks of challenges to the CBAM and improve the perception if the CBAM was challenged.

2.4. CBAM Legislative Timeline

The current CBAM proposal was first mooted in December 2019 but is still in the very early stages of the legislative process. At various stages in the process, the different EU institutions (Commission, Parliament and Council) will have varying degrees of influence in the development of the CBAM. As Figure 4 shows, the recently released European Commission proposal is one of the many intermediate steps, which will most likely be followed by at least another year and a half of assessment and legal scrubbing before a CBAM could officially come into force, earliest in January 2023.

Figure 4 Legislative Timeline of the EU's CBAM



European Commission process

On 11 December 2019, newly inaugurated Commission President Ursula Von der Leyen presented the Communication on the European Green Deal. This document contained a plethora of policy proposals, including a carbon border adjustment to be introduced in selected sectors, 'should differences in worldwide levels of ambition persist'[43]. While certain policy initiatives were delayed due to the Covid-19 pandemic, the CBAM was not, and the Commission's communication on the EU's recovery package confirmed its intention to put forward a proposal for the CBAM in summer 2021. This communication introduced the idea that the revenues from the CBAM could be used for repaying the debt incurred for the recovery package[44].

As part of the EU's legislative process, the European Commission is required to consult with relevant stakeholders and the general public about any proposed measures. For a new legislative proposal like the CBAM, there are two necessary steps.

1. An Inception Impact Assessment: stakeholders are invited to give unstructured feedback about the general idea for the legislation. The Inception Impact Assessment for the CBAM took place between 4 March and 1 April 2020, via the Commission's online consultation platform.
2. Public Consultation: a detailed online questionnaire to gain stakeholder views on various policy options was held from 22 July to 28 October 2020 and received 609 responses[45]. In late 2020, the Commission contracted two consultancy groups to undertake an impact assessment of the

[43] Communication from the Commission: The European Green Deal, European Commission, 2019
[44] Communication from the Commission: Europe's Moment: Repair and Prepare for the Next Generation, European Commission, 2019
[45] Summary Report: Public Consultation on the Carbon Border Adjustment Mechanism, European Commission, 2021

different options for the CBAM. Experts and relevant stakeholders took part in detailed interviews as part of the impact assessment, the results of which are yet to be released.

The CBAM proposal, which will outline the first details of how the instrument will work and what sectors will be covered, is due to be presented by the European Commission in July 2021.

European Parliament Report

The European Parliament will have the opportunity to amend and vote on the CBAM proposal which the Commission will put forward in the coming months. However, Members of the European Parliament (MEPs) already had a chance to express their views on the CBAM through an Own Initiative Report. An Own Initiative Report is not legally binding, but it is an opportunity for the European Parliament to express its stance on a topical issue and for MEPs to inform themselves before having to deal with the full legislative file. The report was voted on in two stages. On 5 February 2021 it was approved by the Environment, Public Health and Food Safety Committee, which dealt with the topic in detail. Following this, it was approved by the whole Parliament on 10 March 2021[46].

Co-decision procedure

Once the European Commission makes a legislative proposal for the CBAM, due in July, it will be the turn of the European Parliament to assess the proposal and propose amendments to the text. Then the amended text goes to the Council, which can either approve the Parliament's text or amend it further. At this point, the text is returned to the Parliament, which can either reject the whole file outright, approve the Council's changes, or propose further amendments. In the case of the latter outcome, the Council assesses the second round of the Parliament's changes; if all amendments are approved by the Council, the legislation is passed.

If the Council cannot agree to all the Parliament's amendments, a conciliation committee (also known as a trilogue) takes place. The conciliation committee consists of an equal number of MEPs and Council representatives who seek to negotiate a compromise. The compromise text must then be approved by both Parliament and the Council in order to be adopted[47]. From start to finish, this process can take between one and two years. The Commission's goal of having the CBAM in force by January 2023 is therefore ambitious yet achievable.

Voting in the European Parliament take place by simple majority. In the Council, there is a system of qualified majority voting, which means a piece of legislation is approved if 55% of Member States (i.e. 15 out of 27) representing 65% of the EU population vote in favour. Most Council decisions are taken in this way. However, certain issues require unanimity from the Council, such as foreign policy, citizenship, the EU budget and the harmonisation of taxation. If the CBAM proposal takes the form of a customs duty or other taxation, it would therefore require a unanimous decision from the Council, making the approval process even more complex.

Although the above voting steps take place sequentially, concertation takes place simultaneously at the Parliament and Council once the Commission has proposed the legislation, with Member States and Parliament sending (sometimes conflicting) signals of majority positions.

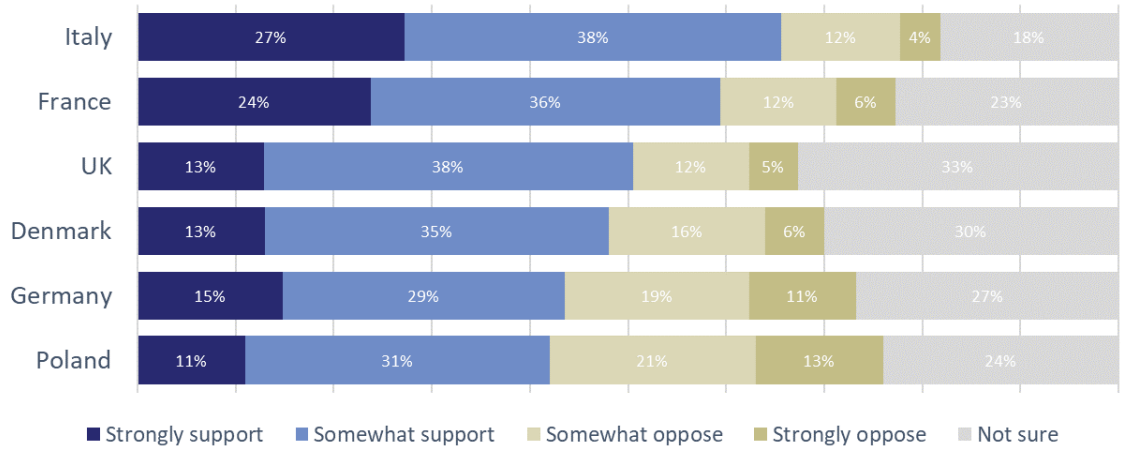
[46] Towards a WTO-compatible EU carbon border adjustment mechanism, Legislative Observatory, 2021
[47] Ordinary Legislative Procedure, European Parliament, 2021

2.5. Public Opinion

An E3G-commissioned YouGov polling suggests that over 40% of the European public (in all 6 countries surveyed) is supportive of the CBAM proposal, despite the potential risk of a trade dispute. The proposal enjoys the highest support in Italy (65%) and France (60%). A significant portion of the public (over 30% in the UK and Denmark) remains undecided on the topic.

Figure 5 Public support for CBAM in 6 European Countries (April 2021)[48]

Question: Do you support or oppose a carbon border levy?*



* The following question was posed to the survey's respondents: The EU is proposing a carbon border levy, a fee on imported products that have not paid a carbon levy at source. Supporters of this plan say that a carbon border levy would allow cleaner products produced in the EU to compete on a level playing field and encourage the EU's trading partners to reduce their carbon emissions. Opponents say it could create a major trade dispute with the EU's trading partners, including China, make imports more expensive and risk damaging the goodwill required to address climate change. Do you support or oppose a carbon border levy?

3. Potential impact of CBAM on China

The introduction of a CBAM along with the phase out of free allocation would impose the full carbon costs of manufacturing on both EU producers and importers. In turn, these carbon costs could then be passed on to the final EU consumers through increased prices of basic materials. EU and Chinese (or other foreign) producers would sell those materials for higher prices, recovering the compliance costs of the EU ETS (EU producers) and CBAM (foreign producers) to preserve their profit margins. Further down the value chain, more expensive basic materials will impact the profit margins of intermediary EU manufacturers using these materials in their products. Foreign-based manufacturers of final products would likely be positively impacted by an EU CBAM as they would pay less for basic materials than their EU competitors, resulting in a competitive advantage.

The final impact of an EU CBAM will depend on a number of parameters, including:

[48] The polls were conducted in six European countries (Denmark, France, Germany, Poland, Italy, and the United Kingdom) and total sample size across six countries was 8,955 adults. Fieldwork was undertaken between 31 March - 9 April 2021.

- Which sectors and traded goods are covered by the CBAM;
- whether or not the CBAM covers only direct emissions or also indirect emissions from electricity use, or even full lifecycle emissions;
- the carbon intensity values used under the EU CBAM;
- whether free allocation is maintained or not, and at which level

3.1. Scenario Definition

Sector coverage

The Commission's regulation proposal covers **a selection of carbon-intensive basic materials relating to steel (flat sheets, bar, rods, wire etc.), cement, fertilisers, aluminium and electricity generation**, as well as a handful of articles down the value chain, such as steel pipes, containers, railway materials. These are all manufactured through processes covered by the EU ETS. They represented €6.5bn of exports from China to the EU27 in 2019, for 4.8m tonnes of products (the exact list with associated trade is given in the appendix). Other carbon-intensive basic materials covered by the EU ETS but not by the CBAM proposal include more products in the sectors of steel (e.g. alloy steel), cement, fertilisers and aluminium (e.g. kitchenware), but also **glass, ceramics, pulp and paper**. These other carbon-intensive products were estimated to total €5.0bn Chinese exports to the EU27 in 2019 and are **possible candidates for an extension** of the CBAM to more products in the future.

Table 2 Potential (near and long-term) scope of CBAM – in EUR of Chinese exports to the EU27 (2019)

(in € Chinese exports to EU27 in 2019)	Products covered by the EC proposal	Carbon-intensive product types not covered by proposal	Exposure directly down the value chain of products in the proposal
Iron and steel	4,876,849,555	83,241,559	5,366,287,298
Aluminium	1,545,518,994	462,416,257	1,354,394,553
Fertilisers	74,621,175	-	213,183,134
Cement and lime	2,808,221	5,332,925	-
Electricity	-	-	-
Plastics and rubber	-	2,124,734,768	-
Other Chemicals	-	976,545,608	-
Pulp and paper	-	882,276,159	-
Glass	-	301,038,395	-
Ceramics	-	196,952,496	-
Grand Total	**6,499,797,945**	**5,032,538,167**	**6,933,864,985**

Source: Sandbag, using Comext database

The regulation proposal allows for the possible inclusion of more sectors after a 3-year review period, i.e. from 2026.

The proposal even leaves the door open, after the review period, to any product at risk of carbon leakage, which suggests a possible extension (in theory) to the entire **"Carbon Leakage" list** of the EU ETS. This would add another €15.9bn goods exported by China in 2019. The Carbon Leakage list, which was established to determine which installation covered by the EU ETS was eligible for the maximum free emissions permits, covers about 95% of the scheme's industry emissions. Although it involves many more products than carbon-intensive basic materials (e.g. from copper production to 'Preparation and spinning of textile fibres'), it mostly regards specific industrial processes rather than actual products. Whilst applying a CBAM to these products could become complex if it involves tracing back their production process, the impact (and therefore the beneficial value) of a CBAM on those products would be smaller due to their relatively less carbon intensive nature. **We therefore consider such extension as very unlikely**.

More relevant than the entire ETS Carbon Leakage list, the inclusion of a small selection of **finished products made of carbon intensive basic materials** might be of interest, to avoid European production of such goods from being substituted with comparatively cheaper goods shipped from overseas. Obviously, the inclusion of such products down the value chain makes more sense for products with higher content of carbon intensive basic materials and lower value. We have identified products worth €6.9bn in Chinese exports to the EU27 in 2019.

Quantification - Carbon intensity values

CBAM charges will be calculated as:

carbon unit cost	**X**	**quantity of products**	**X**	**carbon intensity of product**
€		**t or MWh**		**tCO2e/unit**

It is widely believed that the carbon intensity should reflect as closely as possible the actual emissions embedded in traded products. However, default values might also be used.

The European Commission's regulation proposal uses carbon intensity factors **based on certified verified measures** for the plants that register with a CBAM authority, just as it is done for plants covered by the EU ETS. In the absence of certified verified measures, the text proposes to use **country-specific default values 'with a markup'**, or if that is not available either for a specific type of goods, they will be based on the 10% worst-performing EU plants for that type of goods.

The use of certified verified measures opens the door to 'resource shuffling', which is the selective export to Europe of the 'cleanest' products to benefit from lower CBAM, while the 'dirtiest' ones are directed to other markets. Another incentive is for the 'cleanest plants' to provide verified data while the others benefit from the country average. If so, the application of a markup on the other plants might contribute to correcting this bias.

Indirect emissions

The regulation proposal leaves the door open to the inclusion of indirect emissions (from the use of electricity) into the scheme after its transition period from 2026. It should be noted that 'indirect' carbon costs (from power use) are currently compensated to EU producers by an opt-in state aid system at

Member State level, so such inclusion would only be possible alongside an equivalent phasing out of the state aid system.

We however believe that such inclusion would bring more trouble than benefit to the EU, as the EU's energy mix is quickly decarbonising and EU plants will increasingly be able to escape indirect carbon costs by sourcing renewable energy through power purchase agreements. The protection for EU plants brought by the inclusion of indirect emissions into the CBAM would thus only be temporary, while the corresponding phasing out of state aid would add another degree of complexity. Although the draft regulation mentions (in a preamble) that the CBAM would have to replace both the state aid regime and free allocation, there are no provisions in the actual regulation indicating how this would be done. Similarly, there are no provisions in the proposed amendment to the EU ETS directive commanding the phasing out of state aid as the CBAM ramps up. We therefore believe that **the inclusion of indirect emissions is unlikely**.

We believe that, overall the proposed options do not over-compensate EU producers. If resource shuffling occurs on a massive scale, with importers paying less CBAM than EU producers pay in emissions permits, the ability for EU producers to pass through their carbon costs might be reduced. In some cases, the CBAM could therefore turn out to be more favourable to importers into the EU, than to EU-based producers.

Combination with free allocation under the EU ETS

The European Commission's regulation proposal allows the CBAM to exist alongside free allocation of emission permits under the EU ETS, so it is not exactly a matter of substituting one with the other. For one tonne of product imported, the number of CBAM paid may not exactly match the free permits removed so there is inevitably a difference between the amount paid by EU producers (in terms of free permits removed) and importers.

The proposed amendment to the EU ETS Directive stipulates that free allocation shall be phased out by 10% each year over 10 years (from 2026 to 2035) for CBAM sectors. The CBAM regulation proposal stipulates that the number of CBAM certificates to be surrendered should be discounted to reflect the extent to which EU ETS allowances are allocated for free to EU plants. However, the exact formula calculating the discount as a function of free allocation is not given at this stage. In what follows, we assume that, each year:

CBAM fee (y) = Undiscounted CBAM – free allocation (y)

Scenario definition

We have looked at the following combinations, with the sector coverage as proposed in the current regulation proposal followed by two possible extensions after 2025, and using three measures of carbon intensity. The **'EU Worst'** carbon intensity scenario corresponds to the regime of the proposal applicable to importers of Chinese goods if no reliable data is available on the goods, at plant level or at country level, i.e. based on the 10% worst performing EU plants. The **'China Average'** carbon intensity scenario is based on Chinese average carbon intensity. It is the default regime under the proposal applicable to products for which there are data available at country level but not at plant level. Unlike indicated in the proposal, we did not apply any markup, assuming this markup would only aim at correcting potential discrepancies between the average embedded emissions of the goods imported from the country with average embedded emissions of the goods produced in the country. The **'Direct + Indirect'** carbon

intensity scenario uses Chinese direct emissions and indirect emissions based on the Chinese electricity mix. Although this scenario is a possibility mentioned in the CBAM regulation proposal, we believe that it is unlikely to happen for reasons already exposed.

Table 3 Scenarios used in this analysis

	Sectors covered	China Average	EU Worst	Direct + Indirect
2023 setup (central)	Some basic emission-intensive products, as per the draft proposal	Direct: avg Chinese Indirect: -	Direct: 10% worst EU Indirect: -	Direct: avg Chinese Indirect: Chinese mix
>2025 extension 1	Addition of all remaining basic emission-intensive materials	Direct: avg Chinese Indirect: -	Direct: 10% worst EU Indirect: Chinese mix	Direct: avg Chinese Indirect: Chinese mix
>2025 extension 2	Addition down the value chain of low-value manufactured products containing emission-intensive basic materials	Direct: avg Chinese Indirect: -	Direct: 10% worst EU Indirect: Chinese mix	Direct: avg Chinese Indirect: Chinese mix

3.2. Quantitative analysis

We extracted trade data from Eurostat's Comext database, which covers about 20,000 product types split between 100 main "families".

The EU ETS covers manufacturing installations rather than products. Installations are classified according to their NACE sector, which represents economic or manufacturing activity, but this classification is optional thus it is not entirely reliable. Therefore, there is not always an obvious match between products and installations covered by the EU ETS and the product types listed by the Comext database. Of a total €362bn goods imported from China to the EU27 in 2019, we identified 7 categories:

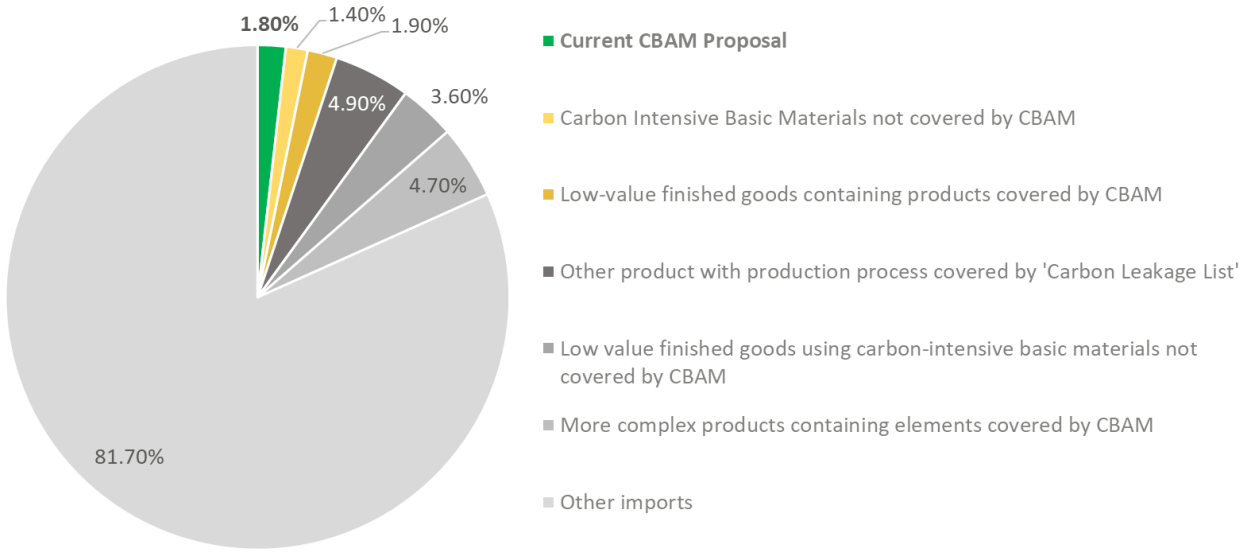
Possible candidates for a CBAM

- The products included in the EC's proposed regulation will likely be covered by the CBAM from 2023: a selection of products and articles of steel, aluminium, cement, as well as electricity and some fertilisers.
- Other carbon-intensive basic materials such as ferro-alloys, lime, plastics, ceramics, pulp and paper etc. which could possibly be covered by the CBAM at a later stage (from 2026)

Low-value finished goods containing materials covered by the proposal, which could possibly be included into the CBAM at a later stage (e.g. steel screws or radiators, aluminium pots etc.)Unlikely candidates for a CBAM

- Products involving processes covered by the 'Carbon leakage list', which involve some degree of exposure to trade but will probably never be covered by the CBAM (e.g. medicinal chemicals, other non-ferrous metals, textiles etc.)
- Low-value finished goods using carbon-intensive materials not covered by the proposal, which will probably not be covered until a much later stage, if ever (such as plastic packaging, ceramic pots and basins).
- More complex products containing carbon-intensive basic materials, which will cost less to manufacture outside the EU (e.g. tools, vehicles, printed booksetc.)
- Traded goods not or nearly not related to or impacted by carbon pricing.

Figure 6 Value of Chinese exports of goods to the EU27 covered by CBAM (2019)

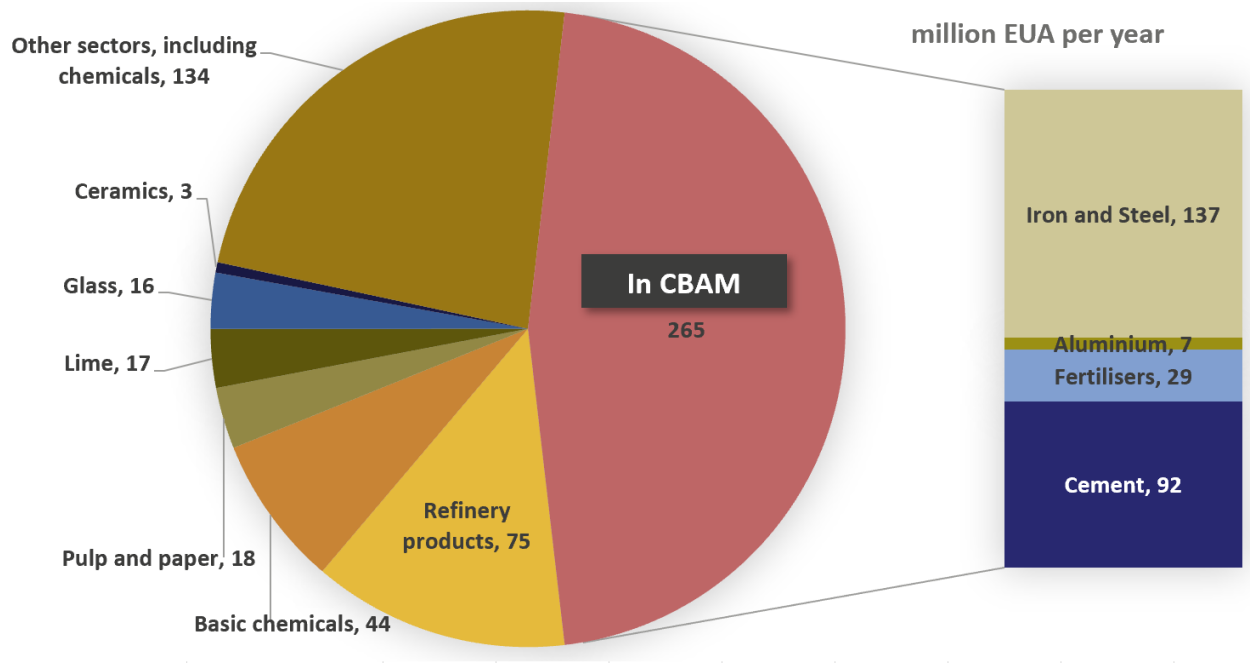


Source: Sandbag using Comext database[49]

The goods covered by the CBAM regulation proposal represent €6.5bn (1.8%) out of €362bn Chinese exports to Europe in 2019, in value. Potential extensions could increase that share to 5% in an extreme scenario including the extensions 1 and 2 mentioned above. Despite this very low coverage, the amount of European allowances given to European plants producing the goods covered by the proposed regulation represents 47% of all those given to industry. At a price of €60 per tonne of CO2, this represents **€15.9bn per year**.

[49] Comext database

Figure 7 Number of emission allowances distributed to industry for free in 2021



Source: Sandbag, European Commission[50]

Carbon price forecast

The EU carbon price has risen a lot recently, up to €58.6 on 1st July 2021. This was driven by reforms and anticipation of further reforms in the EU ETS. Some analysts predict prices of over €100 soon.

Future evolution will depend on the stringency of the actual reform which we will only know in 2022, and the cost to industry to adjust to the new constraint.

For the sake of this analysis, we have assumed a carbon price of **€60 per tCO2**. We believe this to be a conservative assumption, as the price observed in May to early July 2021 (well over €50) reflects expectations of reform which were slightly over-optimistic. Indeed, many loopholes in the EU ETS are unlikely to be fully addressed by the coming reform, until at least its next phase (after 2030)[51]. In addition, analysts tend to overstate the cost to industry to comply with the ETS cap not least because the vast subsidies, which will undoubtedly reduce the costs to industry, are usually not taken into account in their analyses.

CBAM fees charged to importers

To estimate CBAM amounts in each sector, emissions intensity values were taken from the literature where available, covering the EU and China. This includes values published by the EU in June 2021 regarding average emissions intensity[52]. We had to make assumptions for product definitions that are not precise enough (e.g. 'Mineral or chemical fertilisers containing two or three of the fertilising elements

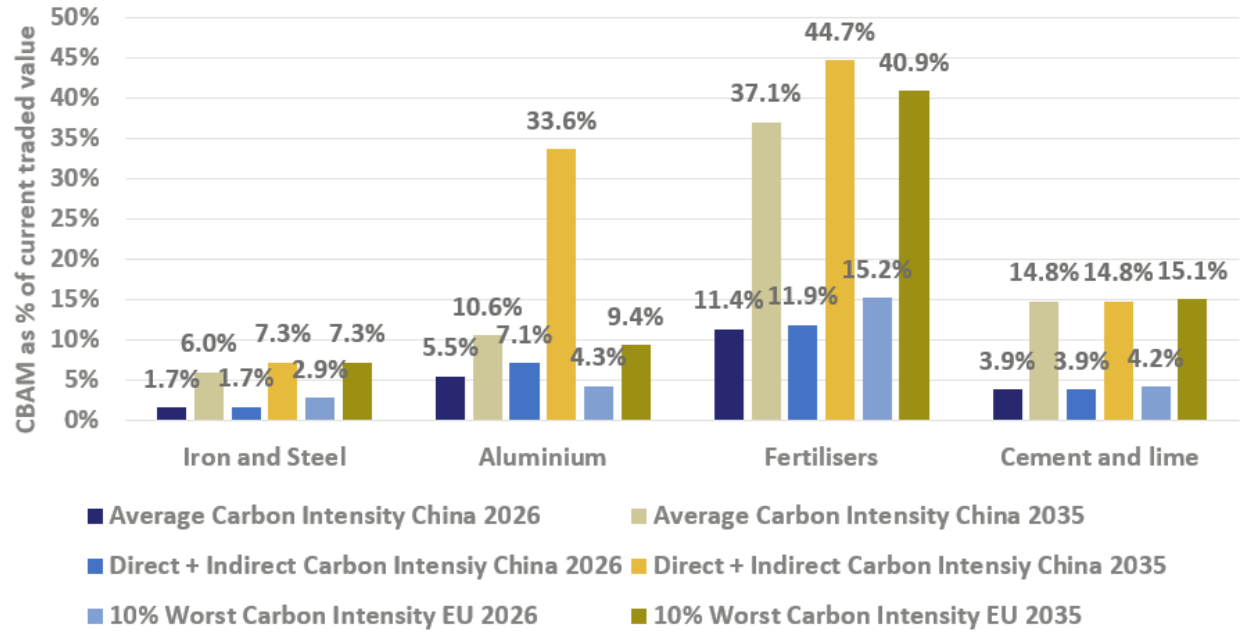
[50] Update of benchmark values for the years 2021-2025 of phase 4 of the EU ETS, European Commission, June 2021
[51] ETS reform: under the hype, a sense of déjà-vu, Sandbag, July 2021
[52] Update of benchmark values for the years 2021-2025 of phase 4 of the EU ETS, European Commission, June 2021

nitrogen, phosphorus and potassium') or for products for which the production process is not known (e.g. applying blast furnace process emissions intensity values to flat steel products and electric arc furnace values to long steel products). Assumptions for carbon intensity are given in the annex. The scenarios covered are those presented in 'Scenario Definition' of section 3.1, with three levels of coverage and three levels of emissions intensity considered for the CBAM calculation.

To illustrate the proposed amendment to the EU ETS Directive, phasing out free allocation for CBAM products over 2026-35, CBAM fee charged (Figure 7) was calculated as:

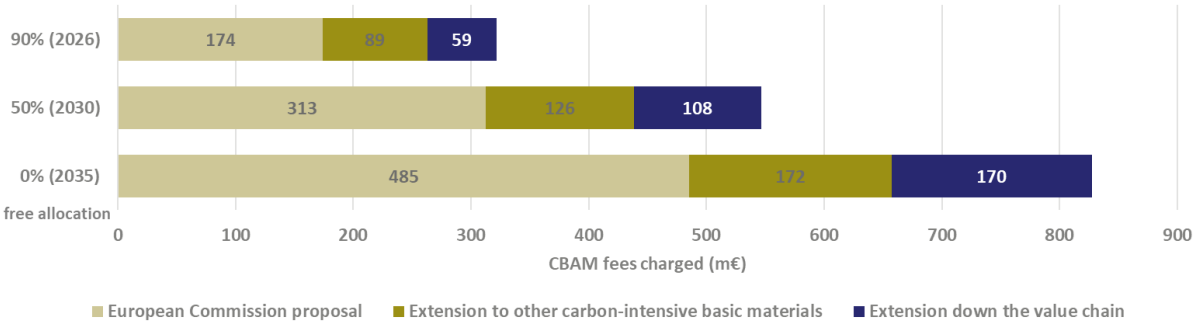
CBAM fee (y) = Undiscounted CBAM – free allocation (y)

Figure 8 CBAM fees by sector in 2026 and 2035



Source: Sandbag

Figure 9 Total CBAM fees charged for Chinese imports, depending on free allocation level:



Source: Sandbag

Based on our 'China Average carbon intensity' scenario applied to Chinese goods, for import volumes equal to those recorded in 2019, the total CBAM paid for imports of Chinese goods in 2026 would be €174m, increasing to €485m in 2035 when free allocation is reduced to zero.

Figure 8 shows that the potential addition of indirect emissions to the CBAM scope would have a relatively low impact on most sectors apart from aluminium, for which it would lead to a large increase in the CBAM paid. This is due to the large amounts of electricity required in the aluminium smelting process.

Adding more products, further down the value chain could lead to an increase in total CBAM fees from an estimated €485m to €827m, assuming 2019 import volumes and emissions intensities.

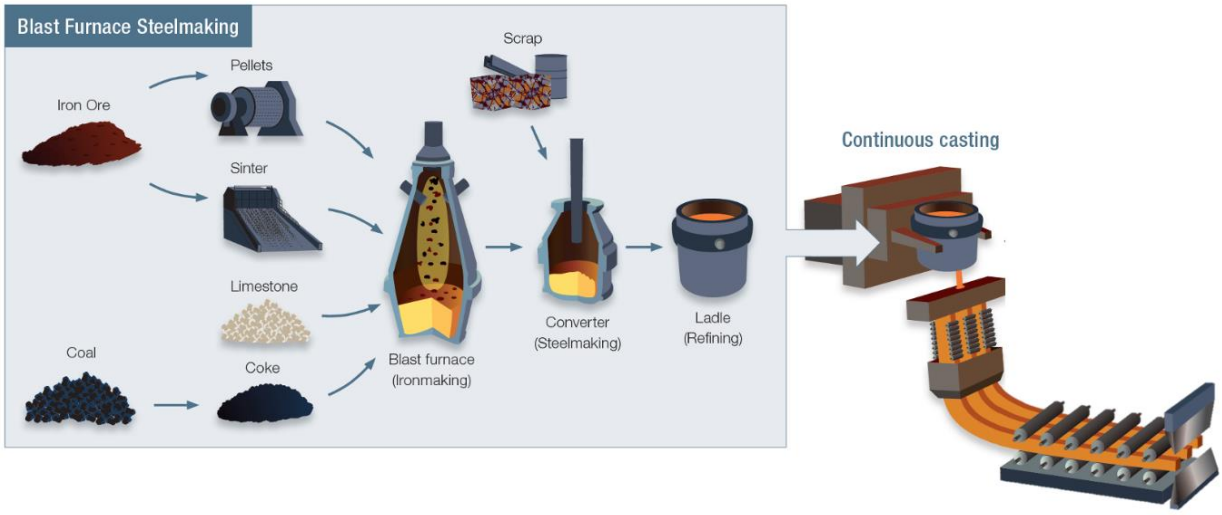
Box 2: Case Study – Steel Making

China has a relatively young fleet of plants with an average age of 12 years, compared to European plants which have an average age of 45 years[53].

The CBAM paid by EU importers of Chinese steel will be based on direct emissions only. For this study average Chinese direct emissions values from literature have been used, giving emissions of 2.1tCO2e/t crude steel for the blast furnace production process. Between 2026 and 2034 these emissions will be discounted by the free allocation of EUAs in the EU.

Free allocation under the EU ETS is based on 'benchmarks' covering the following processes: 'Hot metal' (1.288 free EUA per tonne of steel), 'Sintered ore' (0.157 EUA per tonne of ore) and 'Coking' (0.217 EUA per tonne of Coke).

Figure 10 Steps of primary steel production[54]



Based on the EU ETS benchmarks and industry average inputs, we estimate that producing a standard tonne of steel in Europe will grant 1.70 free allowances in 2023-25 under the current free allocation regime. Between 2026 and 2035 this will be reduced by 10 percentage points per year resulting in 1.53 free allowances in 2026 and zero in 2035. This means the importers of Chinese steel would need to

[53] Pathways to decarbonization episode two: steelmaking technology, BHP, November 2020
[54] What is steel and how is steel made?, EUROFER, March 2020

purchase 2.1 - 1.5 = 0.6 CBAM certificates in 2026 and 2.1 CBAM certificates in 2035 per tonne of steel product (assuming constant emissions over that period).

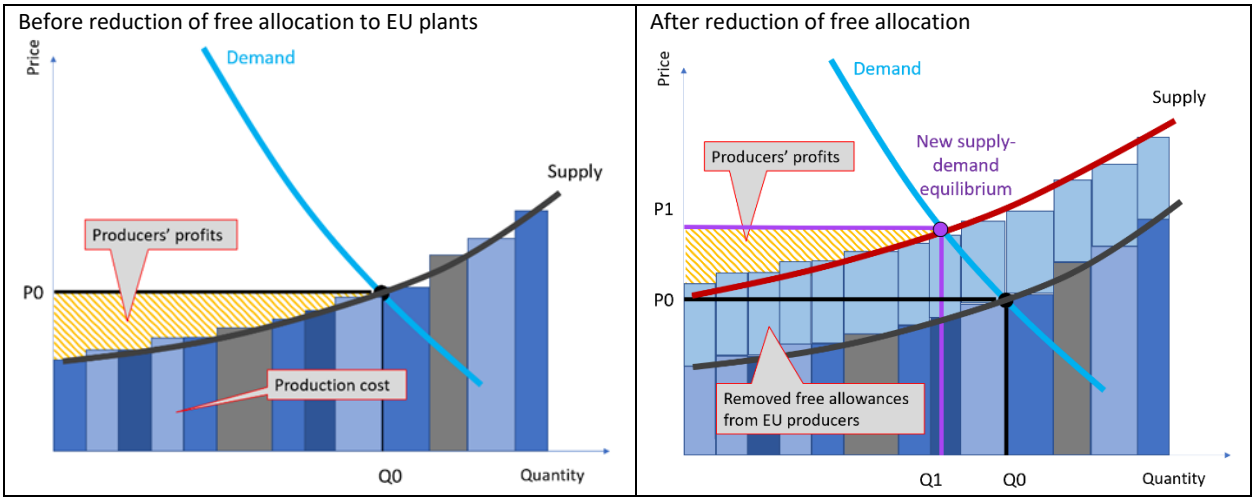
It should be noted that, under the CBAM, the default values applicable for secondary steelmaking from scrap metal will probably be very small, as embedded emissions from scrap metal are explicitly discarded as 'not meaningful' in the regulation proposal, and electricity consumption is not covered by the levy.
The following section describes how this increased cost would be (at least partly) recovered through higher market prices.

Net CBAM cost (after price effect): explanation

As mentioned in the introduction to this chapter, the impact of the CBAM must be considered alongside other measures, such as the phasing down of free allocation of emission permits to EU production plants. As free allowances are phased down, the full carbon costs will be transferred to EU producers, who will then aim to pass those costs through to consumers.

Without the CBAM in place, such cost pass-through might not be possible because imported (cheaper) products would then be available to EU consumers and win market shares: this is carbon leakage in action. But thanks to the CBAM, imported goods would no longer be cheaper, allowing producers to increase their selling prices without losing market shares.

Figure 11 impact of phasing out free allocation on EU market prices

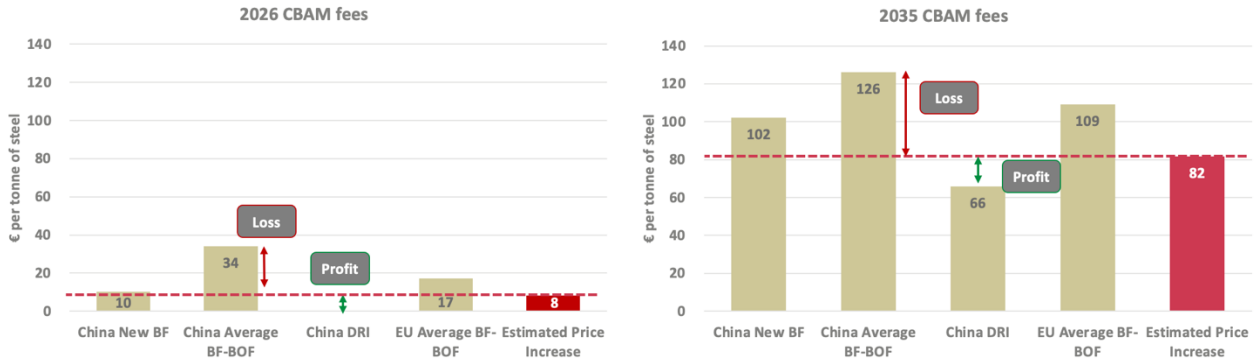


As a result of costs being passed through to consumers, the supply curve shifts upwards and intersects the demand curve at a higher equilibrium price, as illustrated on the above figure. On average, EU producers can preserve their profit margins (for each unit of product built), but there might be less demand for the products after they become more expensive, preventing the market price increase to reflect the full cost increase.

The price increase of the products should equal the size of free allocation being phased out plus the amount of state aid which is reduced (state aid would only be a factor if indirect emissions are included), discounted by a factor which should reflect possible alternative goods for consumers (including imports), or simply their purchasing power. Obviously, there is no empirical value available for cost pass-through in sectors like steel or aluminium because a CBAM has never been implemented before. We however assumed this factor to be 80%, based on studies carried out in the power sector where free allocation was largely abolished in 2013[55]. For basic materials such as steel or aluminium, substitutions with alternative products may be difficult, which suggest a high level of pass-through.

Comparing current steelmaking technologies, shown in Figure 12, lower carbon technologies such as direct reduced iron (DRI) could profit from the CBAM, once price increases are considered. Meanwhile, higher carbon technologies, such as the standard blast furnace – basic oxygen furnace (BF-BOF) integrated steelmaking route are likely to face CBAM costs in excess of the additional revenue from price increase.

Figure 12 CBAM fees vs. additional revenues from price increase for importers of Chinese steel products 2026 (left) 2035 (right)[56] [57]

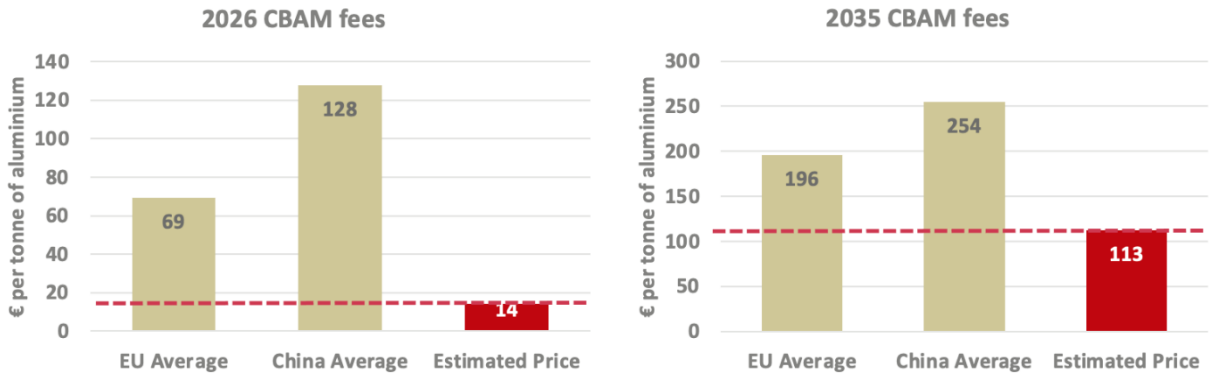


Source: Sandbag

For aluminium, the estimated price increase makes up a smaller proportion of the CBAM costs, resulting in larger net CBAM. However, this graph only shows the costs based on the direct emissions, which are only a fraction of the indirect emissions in aluminium production. Depending on if or when indirect emissions are included in the CBAM, these will represent the majority of the CBAM cost and therefore those companies using renewable electricity could profit from the CBAM price increase.

[55] Pass-through of CO2 Emission Costs to Hourly Electricity Prices in Germany, CESIFO, 2014
[56] The disruptive potential of green steel, Rocky Mountain Institute, September 2019
[57] Assessment of low-carbon iron and steel production with CO2 recycling and utilisation technologies: A case study in China, Applied Energy, June 2018

Figure 13 CBAM fees vs. additional revenues from price increase for importers of Chinese aluminium products 2026 (left) 2035 (right)



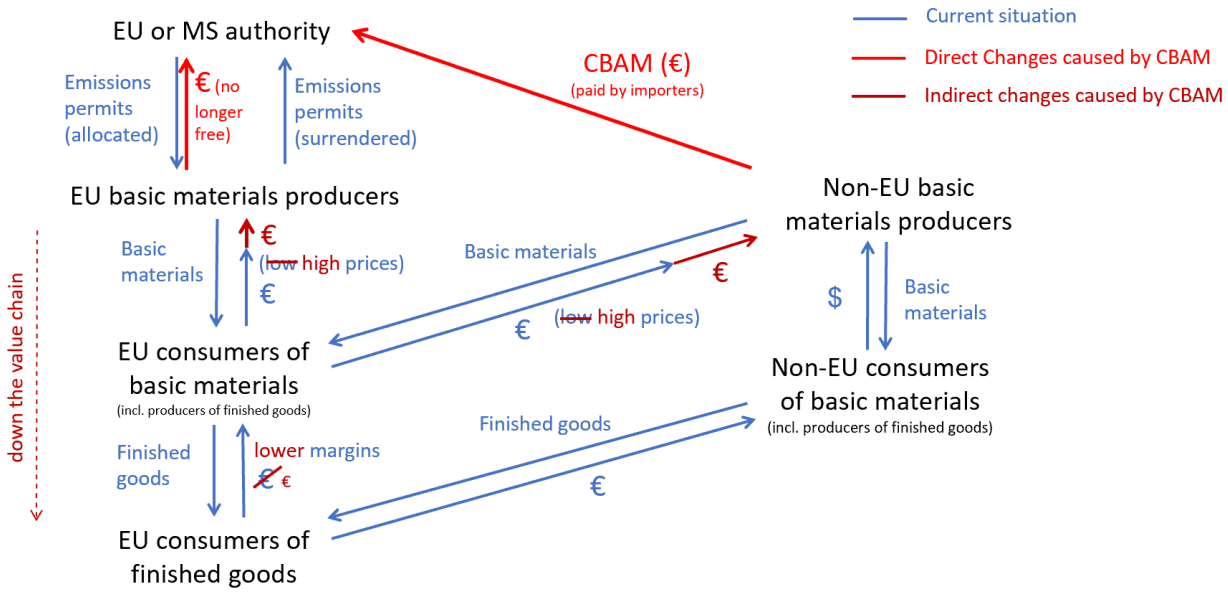
Source: Sandbag

Figure 14 illustrates the combined effect of CBAM and phasing out of free allocation on each economic agent. EU and foreign producers sell goods for higher prices, recovering the cost of permits (in the case of EU producers) and CBAM (in the case of foreign ones) to preserve their profit margins. Further down the value chain, the price rise of basic materials available to EU consumers (including industries using these materials) have to be absorbed by the profit margins of Europe-based makers of finished goods, who are exposed to international competition because the finished goods are not covered by a CBAM. Foreign-based manufacturers of finished goods end up positively impacted by the CBAM, paying less for basic materials.

The following list looks into each of those agents:

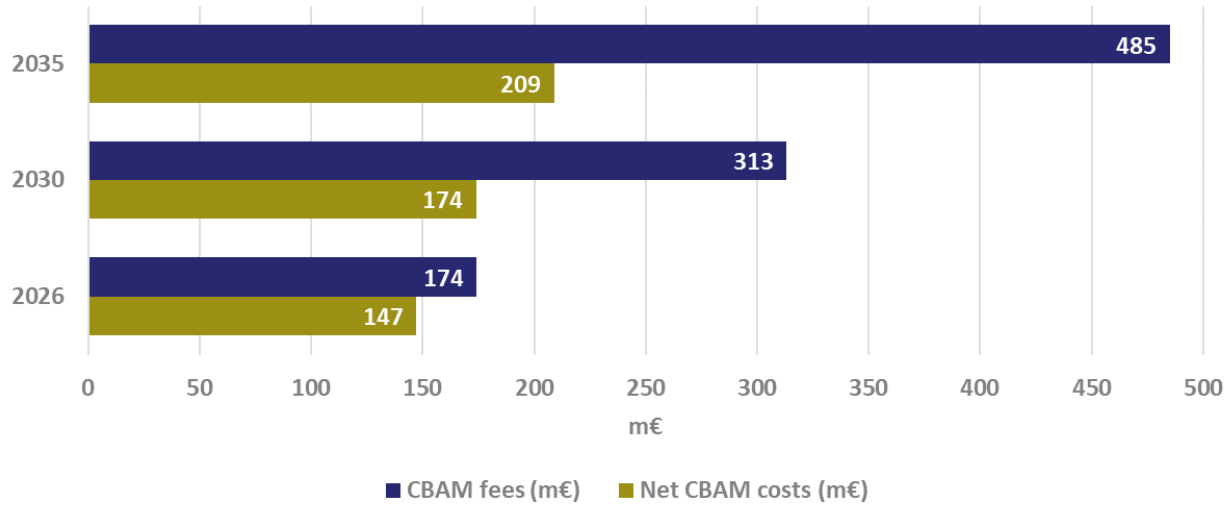
- ✓ The EU or a relevant public authority collects the CBAM, raising funds. In addition, public finances benefit from the proceeds of selling emissions allowances, which are no longer given for free.
- ✓ EU basic material production plants pay more for their emissions permits, but pass those costs through to consumers to protect their profit margins. They are equally off, except for the potentially reduced demand for goods that have become more expensive.
- ≈ Importers of Chinese basic materials pay the CBAM fees, but can enjoy higher selling prices in the EU market, which helps them recovering costs.
- ✘ EU consumers of basic materials face higher costs, among which are producers of finished goods. As finished goods are not covered by a CBAM, EU manufacturers that use basic materials as inputs cannot pass the cost of more expensive basic materials through to the selling prices of finished goods. They need to squeeze their margins to remain competitive.
- ✓ Chinese consumers of basic materials do not bear carbon costs. Producers of finished goods can keep selling their goods for the same price as before, keeping their margins untouched, unlike their European peers.

Figure 14 Impact of a CBAM on different stakeholders



Net CBAM costs: results

Figure 15 CBAM cost to importers of Chinese goods covered by CBAM regulation proposal under the free allocation regimes expected in 2026 (90%), 2030 (50%) and 2035 (0%)



Source: Sandbag

Figure 15 illustrates the mitigating effect of price increases for the products covered by the proposed CBAM regulation. The lower free allocation is, the more product prices rise and reduce the net burden of the CBAM.

Thus, the net CBAM cost ends up relatively independent of the free allocation regime, as a high level of free allocation reduces the amount of CBAM but also limits the level price increase. Conversely, a low level of free allocation increases CBAM fees but creates more revenue for sellers from price increases.

Box 3: Case Study – The Aluminium Industry

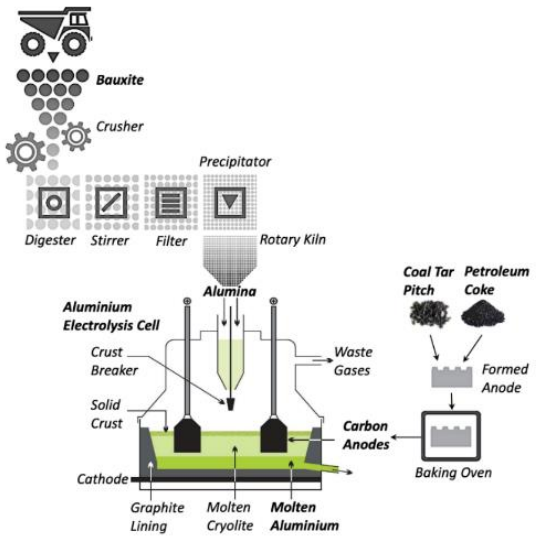
As shown in the diagram below, producing primary aluminium consists of three main parts: Producing alumina from bauxite, producing carbon anodes from pitch and coke, and combining these in an electrolysis cell to extract molten aluminium.

This molten aluminium is then siphoned into a holding furnace and then cast to form slabs, which are rolled and further treated to form a range of aluminium products including aluminium extrusions, sheets and foil.

The CBAM paid by importers of Chinese aluminium into the EU would be based on their direct emissions. For aluminium our estimated Chinese average direct emissions intensity was 4.2tCO_2/$t_{Al.}$

In the EU ETS, primary aluminium production free allocation is governed by two benchmarks: "Pre-bake anode" and "Aluminium". We had to estimate free allocation for alumina production, as it is presumably governed by generic benchmarks, for which there is no sectoral data available. From the 2021 benchmarks we deduce that producing a standard tonne of primary aluminium in Europe will grant 2.346 free allowances from 2021 to 2025 and from 2026 this will be reduce 10 percentage points per year to zero in 2035. So in 2026, 2.11 free allowances will be granted per tonne of aluminium. As such, this free allocation regime would result in the importer paying 4.2 - 2.11 = 2.1 CBAM certificates per tonne of aluminium. For equal levels of emissions this value would rise to 4.2 CBAM certificates per tonne of primary aluminium in 2035.

Figure 16 Showing primary aluminium production process and anode production[58]



Impact on supply chains

Increasing prices of basic materials is likely to have an impact on the trade of products down the value chain of some finished products. Below we analyse the effect on two products with large contents of steel.

[58] See Aluminium, The Essential Chemical Industry, 2016; and Aluminium Production Process, Capral Aluminium

Example 1: an offshore wind farm

This paragraph analyses potential effects on the real-life example of an offshore windfarm which was built in the North Sea. The total budget for the final client for this 300+MW wind farm comprising 54 wind turbine generators (WTG) was €1bn, of which most was for the EPCI contracts (Engineering, Procurement, Construction and Installation) of the farm's main elements.

All the main elements were manufactured in the EU, where steelmakers receive free CO2 permits. If those free permits were removed as the CBAM enters into force, and carbon costs were passed through to the final product, it would cost more to manufacture wind farms in Europe than currently, which could comparatively benefit suppliers based overseas.

The table below shows that a carbon price of €60, if the carbon costs were passed through to the client as described in the previous section, would raise the overall price by 0.9%, which would probably not materially affect the demand for EU-made wind farms overall. However one of the farm's elements could suffer from overseas competition: EU-made foundations (i.e. sets of two long tubes called 'monopiles' and 'transition pieces' screwed together) would become 6.7% more expensive. Given the very specific transport conditions of these elements, it is unlikely that those would be sourced from remote areas, so the risk of carbon leakage related to this product seems however limited.

Table 4 Cost to EU manufacturer of an offshore wind farm (assuming a carbon price of €60) after full CBAM implementation (2035)

	#	Weight	EPCI price per item (m€)	CO2 cost per item (m€)	CO2 cost of EPCI (%)	CO2 cost of procurement (est, %)	Total CO2 cost (m€)
Foundations	54	1,007	2.30	0.10	4.5%	6.7%	5.55
Offshore substation	1	5,200	80.00	0.53	0.7%	1.0%	0.53
WTG	54	455	9.80	0.05	0.5%	0.7%	2.51
Other	1	-	260.00	-	0.0%	0.0%	-
Total	**-**	**84,148**	**993.40**	**-**	**0.9%**	**1.8%**	**8.58**

Source: Sandbag

Example 2: Passenger vehicles

A car is broadly speaking made up of the following materials shown in the Figure 17, with examples of where these materials are used.

Figure 17 Common materials used in the manufacturing of a car

Of these materials shown above, only steel and aluminium are covered by the CBAM. As explained in the previous case study, the CBAM cost pass through will increase the cost of these basic materials for an EU car manufacturer. In 2035, when free allocation is removed and the CBAM is paid in full, the additional cost passed through to the EU car manufacturer is assumed to be based on the amount of free allocation removed. The table below shows an estimate of the cost increase to the EU car manufacturer in 2035.

Table 5 Cost to EU manufacturer of a passenger vehicle (assuming a carbon price of €60)

Material	Weight (kg)	Direct Emissions Intensity (tCO2/t)	Additional Cost (with carbon 60€/tCO2)
Steel	900	2.1	113.40 €
Aluminium	211	4.2	53.17 €
Total			**167 €**

Source: Sandbag

While the price increase shown in the table may represent a relatively large proportion of the cost of the basic material, a €121 increase to the price of a car is insignificant.

The table below is an example of products, not covered by the CBAM, for which imports might become more competitive than EU-made ones as a result of the CBAM. A number of products similarly unlikely to be covered by the CBAM have been identified, which might benefit from it, in the table below.

Table 6 Products for which CBAM is likely to benefit producers outside the EU

Products positively impacted by the CBAM or its extension	Value imported in 2019 (€)
Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	8,945,599,203
Miscellaneous articles of base metal	3,111,754,327

Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal	2,953,469,783
Articles of iron or steel	1,470,524,085
Printed books, newspapers, pictures and other products of the printing industry	583,184,108
Articles of stone, plaster, cement, asbestos, mica or similar materials	22,081,724
Organic chemicals	7,663,920
Total	**17,088,101,308**

Source: Sandbag, Comext database

Further knock-on effects

The CBAM creates extra costs for EU manufacturers using products covered by it, as soon as the other existing compensations for carbon costs are removed (as seen with the example of passenger vehicles). This will somehow reduce profit margins for European manufacturers exporting their products to the rest of the world, unless some equivalent compensation is set up for exporters. Without such compensation, Chinese (and other foreign-built) products would become financially more attractive comparatively than EU-built ones.

3.3. Other existing tariffs and non-tariff barriers

The CBAM is expected to add to the already existing tariffs affecting EU imports from China. Most products face a general import tariff, but there are also more hefty tariffs in the form of anti-dumping measures and countervailing measures. Anti-dumping duties are applied against a particular country, for a particular product that is flooding the market. Countervailing duties are applied against a country on products which that state is supporting through public subsidies. The potential impact of the CBAM on trade must be assessed in the context of these wider tariffs.

The table below shows the existing tariff burden on imports from China, compared to the net discounted cost of the CBAM, under the medium scenario and the current FA regime. The overall tariff burden for each sector was estimated using the TARIC database. The estimation takes into account general duties as well as anti-dumping and countervailing measures that were in place in May 2021. More specific measures and safeguarding measures that were valid until June 21 only were not taken into account.

The table below shows for each sector covered by the EC's proposal:

- the overall default tariff (excluding all company-specific tariffs)
- the minimum (respectively maximum) overall tariffs that would apply if all companies fulfilled the criteria to obtain the minimum (respectively maximum) tariff.

Table 7 Tariffs and CBAM fees / Net cost to importers in 2035 under average carbon intensity scenario

Sector	Chinese exports to EU in 2019 (€)	Total tariffs default rate	Total tariffs Incl. min individual rates	Total tariffs Incl. max individual rates	CBAM fees 2035	Net CBAM cost 2035
Iron and steel	4,876,849,555	7.58%	4.75%	7.53%	6.03%	2.14%
Aluminium	1,545,518,994	26.14%	18.96%	20.97%	10.57%	6.07%
Fertilisers	74,621,175	5.82%	5.82%	5.82%	37.05%	14.24%
Cement and lime	2,927,584	1.70%	1.70%	1.70%	14.81%	5.15%

Source: Sandbag

Regarding the EC's proposal, the net impact of the CBAM compared to existing tariffs greatly differs between the main sectors assessed. For iron and steel the CBAM would be of the same order of magnitude as current trade barriers. For the fertiliser and cement industries the CBAM would be larger than the maximum trade tariffs and for aluminium the CBAM would be less than existing tariffs.

3.4. Impact of CBAM on major trading partners

This section analyses the impact of the CBAM on the EU's major trading partners, so as to compare China with its competitors. Exporters of the most carbon-intensive sectors (steel, aluminium, etc.) into the EU, according to the Comext database, are a mix of large producing countries and smaller states that are neighbours of the EU.

The graphs below show the CBAM amount due by five major economies that are significant trading partners: US, Turkey, Russia, Ukraine and South Korea. The estimated CBAM fees and net costs are given for 2026 (1st year of paying CBAM) and 2035 (end of free allocation). These values use the estimated country average emissions intensity for each benchmark. Where there was insufficient data found EU average values were used. Under the CBAM proposal, the amount due by importers of Chinese products would be lower than that due on Russian, Ukrainian and Turkish goods. As can be seen the large majority of CBAM cost for importers of Chinese products is in the aluminium and steel sectors.

The net CBAM cost, which factors in increased revenues through higher selling prices is significantly lower than the CBAM fees. Overall, the total net CBAM cost barely reaches €1.0bn in 2026 and €1.6bn in 2035 across imports from six major trading partners.

Figure 18 Estimated 2026 CBAM fees vs. Net cost to importers from European Trade Partners [59]

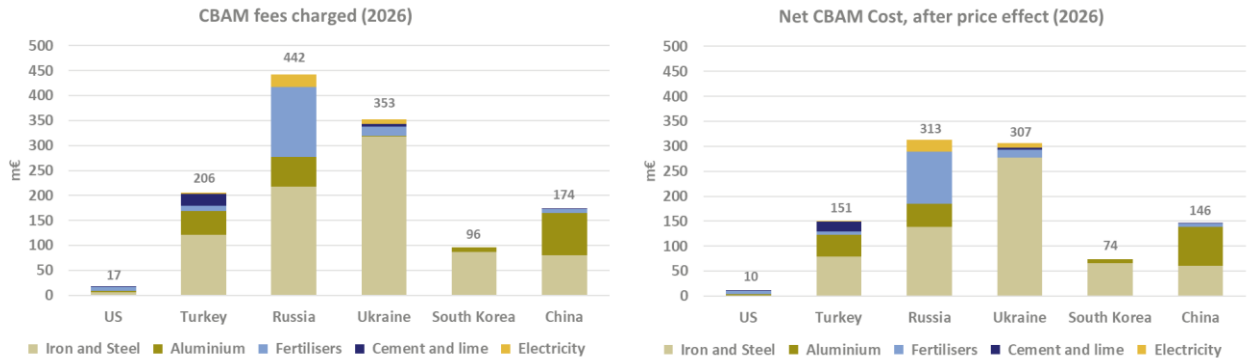
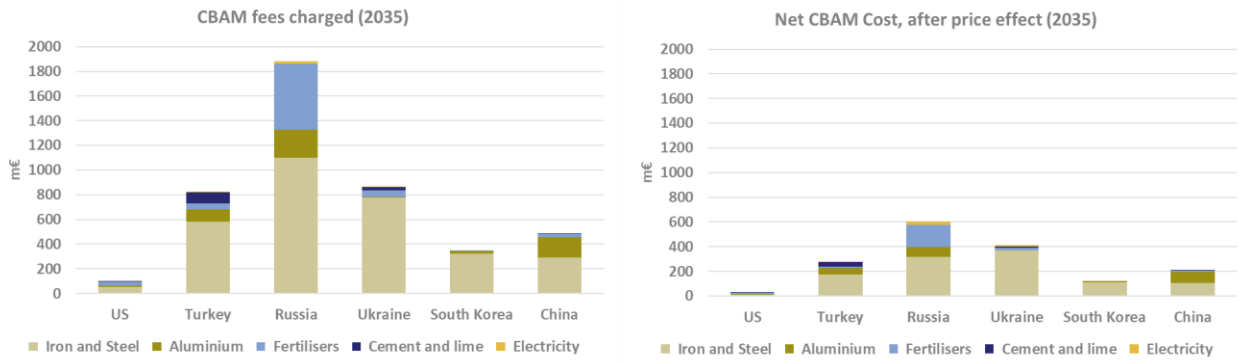


Figure 19 Estimated 2035 CBAM fees vs. Net cost to importers from European Trade Partners



Source: Sandbag

4. The politics of the EU's CBAM

The European Commission's proposal comes at a time of rising geopolitical tensions. In recent years, EU-China relations have been strained by disagreements on the issues of human rights, technology and investment. Supply chain vulnerabilities exposed by Covid-19 have raised European policymakers' concerns over supply chain reliance on China. Despite ending 2020 in a crescendo with the Comprehensive Agreement on Investment, the bilateral relationship took a nose-dive in March 2021 as the EU and China engaged in a war of sanctions over human rights.

The global trading system has also experienced a period of heightened tensions as the US and China engaged in a bitter trade war. US-China relations remain fraught as the Biden administration carries over a large part of its predecessor's assertive China policies. The WTO's binding dispute settlement body is

[59] Publications, International Aluminium; How clean is the US stell industry?, Global Efficiency Intelligence, 2019; Update of benchmark values for the years 2021 – 2025 of phase 4 of the EU ETS, European Commission, June 2021; GNR project reporting CO2 United States, Global Cement and Concrete Association, 2019; GNR project reporting CO2 All GNR Participants, Global Cement and Concrete Association, 2019; Integrated Annual Report Summary, CIMSA, 2020

still paralysed. Against this geopolitical background, the EU needs to actively seek support from its trading partners on the contentious border tax proposal.

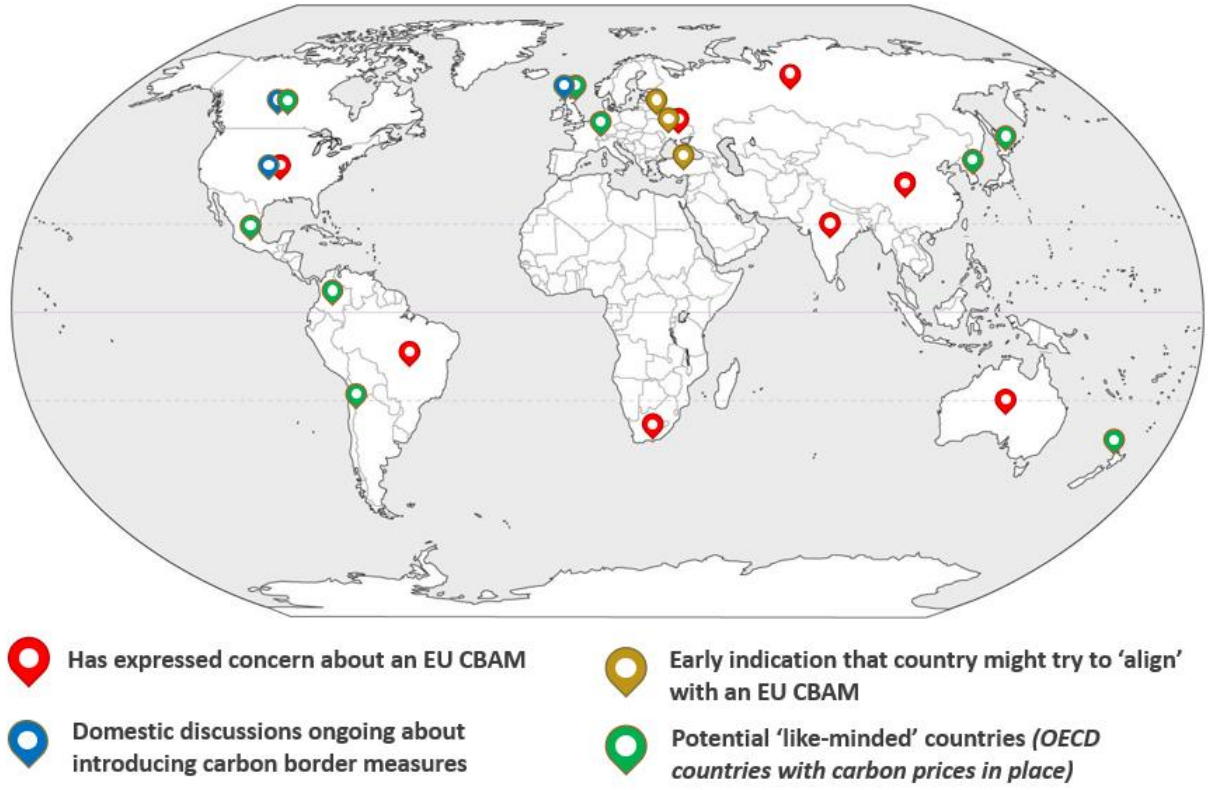
The EU's CBAM would affect countries differently. They could be placed in four groups based on the country's interests and concerns on the CBAM.

Table 8 Key groups of countries to be affected by the EU's CBAM

Major Emitters	• Both developed (e.g. US, Japan) and developing countries (e.g. India, China) • CBAMs have been useful for keeping high-level political attention on climate • Highest risk of potential backlash from major emitters from the developing world • Includes a set of countries that might be willing to have a joint approach to developing Border Carbon Adjustments (BCAs) or product requirements.
Countries pursuing carbon pricing and industry decarbonisation	• Countries that face similar challenge as the EU on tackling carbon leakage • Possible like-minded countries on coordinating CBAM and industrial decarbonisation policies • e.g. China, India, Canada, Chile, Mexico, South Korea, Kazakhstan, Ukraine, New Zealand
Developing Countries	• Countries concerned that CBAM policies are in conflict with the UNFCCC principle of CBDR & RC, especially if the policy does not come with support on low-carbon technology and industrial decarbonisation • Some of these countries have also received support from EU member states and MDBs to expand their fossil fuel infrastructure.
EU Neighbourhood Countries	• Countries with close trade ties with the EU and are likely to be most affected by EU's CBAM • These are all countries with which the EU has a long-established trading and policy coordination relationship and who are, thus, likely to be constructive in pursuing a common solution in this space. • e.g. countries in north Africa and the Mediterranean, EU accession countries, Turkey, and the UK

The EU's top trading partners have been paying close attention to the CBAM conversation in Europe. Some partners are interested in exploring the feasibility of CBAMs, including countries in the EU's neighbourhood and OECD countries that have carbon prices in place. But many are raising concerns on its design, fairness, and feasibility. Countries such as China, Ukraine, Russia and a number of developing countries are pushing back on the idea.

Figure 20 EU's CBAM – Early Reaction from Trading Partners (As of June 2021)



4.1. China

China has repeatedly spoken out against the EU's CBAM publicly and behind closed doors. In a call with the French and German heads of state in April 2021, Chinese President Xi Jinping said 'tackling climate change is a shared responsibility… and should not be a bargaining chip for geopolitics, a target for attacking other countries, or an excuse for trade barriers'[60]. Premier Li Keqiang has reiterated the same message a month later, saying that the international community should be 'on guard against new green trade barrier'[61].

Some Chinese commentators[62] believe that CBAM would be a major political adjustment in the EU's bilateral relationships with its trading partners. Amid a rising trend of nationalism and protectionism, there might be more to lose than to gain by introducing a CBAM. The measure would create uncertainty in the trade environment, inevitably lead to retaliatory measures from China and distort EU-China trade relations. Some also raised the possibility of the CBAM introduction disrupting the COP26 negotiations, particularly surrounding Article 6 of the Paris Agreement.

[60] Xi Jinping Holds Video Summit with French and German Leaders, Ministry of Foreign Affairs of the People's Republic of China, April 2021
[61] Li Keqiang Attends the Second Summit of Partnering for Green Growth and the Global Goals 2030 (P4G), Ministry of Foreign Affairs of the People's Republic of China, May 2021
[62] Expert roundtable convened by E3G

Industry stakeholders in China may not necessarily understand the intent of EU's CBAM to tackle carbon leakage – despite having regional carbon pricing schemes running for almost a decade and the imminent launch of a national carbon market on the electricity sector, the carbon price is relatively low (compared to the EU) and carbon leakage is not a salient issue among policymakers and industry practitioners[63].

There are also voices in China that view the CBAM in a more positive light. Some observers claimed that the EU's announcement on CBAM has spurred discussions around the need for a more ambitious emissions trading system in China[64]. Others have stuck a more balanced tone in reaction to the CBAM. Zhou Xiaochuan, the former governor of the People's Bank of China, has suggested that if the EU goes ahead with the carbon border measure, China and EU could work together and channel the revenues into a trust fund to support climate mitigation efforts in developing countries[65].

4.2. The United States

The US has not explicitly opposed the EU's measure but has expressed concerns. In March 2021, US Climate Envoy John Kerry warned against a CBAM, citing trade concerns and urging the EU to wait until after the COP26 in Glasgow. He feared that the economic costs for developing countries would undermine solidarity messages and have the potential to complicate the politics of COP26 negotiations.

But there are ongoing discussions in the US about introducing carbon border measures. In March, US Trade Representative Katherine Tai included a carbon border adjustment in the country's Trade Policy Agenda[66], saying that the measure would support domestic approaches to reduce greenhouse gas emissions. In May 2021, Climate Envoy Kerry noted a CBAM as a useful tool in levelling the playing field with China. This, however, is not the driving force behind the EU's CBAM proposal. Rather, the EU sees the CBAM as a tool for tackling carbon leakage and essential to achieving their net zero climate goals.

Trade unions, green groups and possibly affected US states have, so far, been quiet on the proposition of an EU CBAM. Most decision makers – legislators and executives – seem to have limited information as to how an EU CBAM would affect the US[67].

Box 4: The Politics of CBAM in the US

The current US administration has signalled their intention to explore the use of carbon border measures. Candidate Joe Biden's Plan for a Clean Energy Revolution and Environmental Justice during his election campaign included a carbon border adjustment proposal—a pledge to "impose carbon adjustment fees or quotas on carbon-intensive goods from countries that are failing to meet their climate and environmental obligations." Furthermore, President Biden's 2021 trade agenda notes that the administration will "work with partners and allies to fight climate change." This will include

[63] Expert interview by E3G

[64] Less confrontation, more cooperation – Increasing the acceptability of the EU Carbon Border Adjustment in key trading partner countries, Germanwatch, June 2021

[65] 深圳拟成立碳排放交易基金 逐步实现绝对总量控制 (Shenzhen intends to set up a carbon trading fund to gradually achieve full control), Caixin, June 2021

[66] 2021 Trade Policy Agenda and 2020 Annual Report, USTR, March 2021

[67] Expert interview by E3G

"exploring and developing market and regulatory approaches to address greenhouse gas emissions in the global trading system, and as appropriate, the consideration of carbon border adjustments."

There have been attempts to introduce carbon border adjustment measures in the US Congress in 2007 and 2009 as part of legislative proposals on establishing carbon pricing in the US, but in both instances these proposals did not get the approval of both houses of the Congress. The Energy Innovation and Carbon Dividend Act 2021 is one attempt by American legislators to introduce carbon border measures. The bill, which was introduced in April 2021, proposes that revenue from the border measure would be channelled to the Green Climate Fund. The bill is largely symbolic – for the bill's sponsors to send a political message – and is unlikely to gain the support necessary to run the course of the legislative process. In early June, four US Republican Senators—Romney, Murkowski, Braun, and Collins—announced they are discussing the idea of a carbon border adjustment but have not yet put together a proposal.

In mid-July, the Senate Budget Committee released a budget blueprint that included a polluter import fee. Shortly after, Senator Coons and Representative Peters introduced a bill with language on the fee that could be included in the budget blueprint. The Coons-Peters CBAM proposal would place a tariff on the imports of aluminium, cement, iron, steel, gas, petroleum, and coal starting in 2024[68]. The tariff would be based on the domestic compliance cost incurred for each sector from any federal, state, local law or regulation designed to lower emissions, including state-level carbon pricing schemes but also fuel efficiency standards. The US proposal represents a significant departure from the EU's CBAM, which is tied explicitly to carbon pricing. This is then multiplied by the embedded emissions of the fuel or good. The legislation leaves the door open for more sectors to be covered once reliable data is available. There are exemptions for least-developed countries and for countries that are at least as ambitious as the US on reducing emissions and do not have a CBAM in place, while the EU's CBAM offers no such exemptions. The revenues would be used for the administration of the tariff, research, development and demonstration of decarbonisation technologies, environmental justice grants, resiliency programs, transitional assistance for workers and support for small businesses. Meanwhile, the EU's CBAM does not explicitly mention an intention to recycle the revenue back into climate projects or provide transitional support. Though, the US plan must surmount multiple political and procedural obstacles before it becomes a reality.

What would a US CBAM look like?

A federal price on carbon is unlikely to materialise before 2030. In the US, politics of a federal carbon tax or cap-and-trade are quite polarised. Some favour the approach because it is a market-based approach to address climate change. Those opposed to it believe that a carbon tax is regressive. Building consensus around a federal carbon tax or cap-and-trade does not seem feasible in the short-term. The Coons-Peters proposal shows how the US could implement a CBAM that is not linked solely

[68] A bill to amend the Internal Revenue Code of 1986 to establish a border carbon adjustment for the importation of certain goods, Senator Coons in the Senate of the United States, July 2021

to carbon pricing, but rather all emissions reductions policies. The border adjustment could also be based on industry carbon efficiency performance rather than a carbon price, which would be viable in the area of steel imports, e.g. a non-tariff barrier approach (possibly avoiding WTO scrutiny) would be a Buy Clean standard for federal procurement which could be by extension a national standard if applied to the entire supply chain. This approach of product standards for government-funded infrastructure projects is especially relevant given President Biden's commitment to investing in climate-focused infrastructure.

4.3. Other trade partners

Outside the EU, the reaction to the CBAM proposal has often been mixed and less enthusiastic. Some countries that already have carbon pricing scheme in place have expressed interest in coordinating with the EU on the implementation of CBAM. The Canadian government suggested that a carbon border adjustment scheme could be introduced there, to apply to both imports and exports[69]. The UK is reportedly considering their own carbon border tax proposal[70].

Some of EU's trading partners in the developing world have expressed their concern over the upcoming CBAM proposal. Brazil, South Africa, India and China made a joint statement expressing 'grave concern regarding the proposal for introducing trade barriers, such as unilateral carbon border adjustment, that are discriminatory and against the principles of Equity and CBDR-RC[71]. Similar concerns over the protectionist nature of the CBAM were voiced by Australian Trade Minister Dan Tehan[72], while a spokesperson for Australia's Energy Ministry said that the mechanism 'risks undermining international cooperation on climate change'[73]. A Russian diplomat at the Department of European Cooperation has publicly stated that 'it seems like [the CBAM] is more about the economy than the environment', expressing hopes that the measure would not necessitate response measures[74].

Many commentators have noted a lack of outward communication on the CBAM by the EU, calling for greater consultation of international trade partners. Advanced engagement with other governments and international organisations, such as the WTO, is considered as a priority for smoothing the way for the CBAM, identifying and solving problems before they are brought to international tribunals. Such outreach may increase once the European Commission has made its proposal, but, for now, international leaders are yet to be disabused of their misgivings over the CBAM.

5. Looking Ahead – International Discussions on Climate and Trade Nexus

The EU's proposal of the CBAM, against a background of heightened trade tensions between major economies driven by COVID-19 and US-China rivalry, has stimulated a renewed debate on measures to

[69] Jason Kirby, 'How the Trudeau government plans to meet its climate goals', Politico, 19 April 2021
[70] UK considers carbon border tax to protect domestic industry, Bloomberg, May 2021
[71] Joint Statement issued at the conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on 8th April 2021, South African Government, April 2021
[72] Europe's plan to tax the world into climate ambition, Politico, April 2021
[73] Bold challenge to decarbonise Australia in 15 years laid down by Climate Council, ABC, April 2021
[74] Diplomat: Russia ready to boost climate ties with EU, but it won't "knock on closed doors", Russian News Agency, April 2021

tackle carbon leakage and other issues at the heart of the climate-trade nexus. Product requirements and standards are a central part of the discussions on complementary and alternative measures to the CBAM.[75]

The EU's new trade strategy indicates an increased appetite by European policymakers to use trade as a tool to promote the bloc's climate objectives and accelerate climate action globally. The new US Trade Representative Tai has signalled that climate change would be at the centre of US trade policy[76]. Some emerging regional trade agreements have focused specifically on the promotion of low-carbon goods and services. While trade and environment negotiations at the WTO have stalled in recent years, these new initiatives are starting to reinvigorate discussions.

The final chapter in this paper explores trade-related policies that would support domestic and international efforts to meet climate goals. They are complementary, and not mutually exclusive, to the CBAM. Accelerating the uptake of low-carbon technologies to address the climate crisis amid geopolitical and trade tension is no mean feat for policymakers. There is no panacea. Countries will need to introduce a suite of measures that balance limiting the risk of carbon leakage with facilitating the trade of low-carbon technologies in order to drive a speedy and just transition towards climate neutrality.

5.1. Climate and Trade Agenda at the WTO

Discussions on eliminating trade barriers to achieve environmental objectives started at the WTO two decades ago. The WTO's ministerial declaration in 2001 included a commitment to start negotiations on the elimination of trade barriers to environmental goods and services. Formal negotiations on the Environmental Goods Agreement (EGA) were launched in 2014 and 26 members of the WTO (including the EU, China and the US), representing 90% of global trade in environmental goods, have participated in the discussions[77]. The negotiations stalled in 2017 as countries failed to come to agreement on the list of environmental goods, against the background of a US administration that was hostile to the international trading system[78]. Some countries, including the EU, Japan and South Korea are now calling for the ECA negotiations to be revived.

There are renewed interests within the WTO to advance discussion related to trade, climate and environmental sustainability. In November 2020, 53 WTO members launched the Structured Discussions on Trade and Environmental Sustainability which aims to identify areas of work within the WTO on relevant matters. China is not currently a participant of this group. The group recognises that international trade and trade policy is "key to enable a climate neutral, resource efficient, circular global economy"[79] and aims to articulate the WTO's role in supporting global climate goals through a roadmap and ministerial statement at the 12th Ministerial Conference (MC12), due to take place in Geneva later this year[80]. **The**

[75] Making trade work for EU climate policy: Carbon border adjustment or product standards, Institute for European Environmental Policy, May 2020
[76] USTR Tai calls for bold action to put climate at center of trade policy, Reuters, April 2021
[77] Free trade in environmental goods will increase access to green tech, CATO Institute, June 2021
[78] Ministerial talks to clinch environmental goods agreement hit stumbling block, International Centre for Trade and Sustainable Development, December 2016
[79] Communication on trade and environmental sustainability, WTO, November 2020
[80] Members discuss possible MC12 deliverables on trade and environmental sustainability, WTO, May 2021

MC12 statement would be an opportunity for interested parties to set the climate and trade agenda within the WTO for the years to come.

While GATT Article XX gives WTO members the justification to impose measures that aim to protect the environment, as discussed in Section 3.3, there are no clear provisions in the Article that address measures taken to achieve climate objectives specifically. Without clear guidance from the GATT articles, policymakers intending to introduce trade-related climate measures such as CBAM are likely to find themselves in a WTO dispute settlement body to debate the legal justification of their measures. The case-by-case nature of WTO disputes does not provide a stable framework for countries to take the necessary measures to implement their climate goals under the Paris Agreement[81].

Some observers, including the former chairman of the Appellate Body at the WTO, have therefore argued that **changes should be made to the text of the WTO agreements** to reduce the legal uncertainty[82]. Amendments could be made to the text to accommodate measures taken to pursue objectives of the Paris Agreement[83]. **A** "climate waiver" could be introduced under Article IX:3 of the WTO Agreement that allows members to introduce measures that could violate WTO rules under "exceptional circumstance", for example – taking measures to address global climate change[84]. However, getting the WTO text amended could be challenging under the current geopolitical climate, as an amendment would require either a two-thirds majority or all members accepting it, depending on the Article in question[85].

With the new Director-General Dr Ngozi Okonjo-Iweala, who took office in March 2021, signalling her commitment to introduce climate into the WTO agenda, there should be a stronger momentum for trade and sustainability discussions at the WTO[86].

5.2. Product requirements

Mandatory carbon product requirements on carbon-intensive industrial materials are an alternative that fares strong on environmental effectiveness, international compliance and administrative feasibility – but could also send a much stronger political signal for international cooperation. Such requirements would apply to both domestic and foreign producers.

Compared to CBAM, **product requirements are more likely to be WTO compatible provided that they meet certain** criteria, such as consultation with trading partners, proportionality to the policy objective and non-discrimination[87]. However, to ensure WTO compliance, countries may be constrained from applying requirements higher than internationally agreed standards (where they exists, for the product or sector in question), which the WTO considers a technical barrier to trade[88].

Product requirements can also drive increasing international climate ambition, one of the stated aims of EU's CBAM. By making market access conditional on products meeting certain energy or carbon standards,

[81] The trade system and climate action: ways forward under the Paris Agreement, Climate Strategies, October 2016
[82] A call for a WTO climate waiver, Yale Center for Environmental Law & Policy
[83] Making the international trade system work for climate change: assessing the options, Climate Strategies, July 2018
[84] The content of the WTO climate waiver, Centre for International Governance Innovation, December 2018
[85] Whose WTO is it anyway? WTO
[86] Ngozi Okonjo-Iweala believes the WTO can change the world. But first it needs reform, Time, February 2021
[87] Can governments ban materials with large carbon footprint? Legal and administrative assessment of product carbon requirements, DIW, 2019
[88] The WTO Agreement on Technical Barriers to Trade, WTO, 1995

product requirements would provide a business case for industries and businesses, in the market where the requirement is introduced but also externally, to invest in climate or energy friendly production technologies.

However, the administrative and technical challenge of certifying foreign-produced goods to meet product requirements is similar to what is required to implement CBAM. Without support to build capacity in low-carbon production and robust product certification system, they also run the risk of reducing development country access to the market.

It may also be more difficult to set product requirements for some sectors with a relatively broad range of immature decarbonisation technologies (like chemicals or cement) than others (like steel or aluminium) where the solutions are clearer. Similar due diligence requirements on soft commodities, such as soybean, palm oil, beef and forest products, could help reduce both deforestation and land-use related greenhouse gas emissions[89].

5.3. Climate Club

A carbon or climate club involves a group of countries pursuing similar carbon pricing policies (e.g. common carbon pricing floor) in collaboration with a view to eventually linking up carbon markets. The idea was made popular by economist William Nordhaus, who believes that a club is needed to overcome the "strong incentives for free-riding in current international climate agreements"[90].

An important feature of the club is to penalise non-members, for example, through uniform penalty tariffs of all imports from outside the club, or carbon duties similar to carbon border adjustment tariffs. The market power of the club would, as proponents argued, drive the club's trading partners to adopt similar carbon pricing policies and pricing level and accelerate climate action outside of the club.

Opponents of the policies pointed to the difficulty for countries to coordinate on a carbon tax or pricing policies[91]. Some observers believed that the idea of a group of countries with progressive climate policies and a high carbon price, most likely consisting of developed countries, putting forward an initiative with protectionist tendencies would undermine the trust in the multilateral system, and potentially the UNFCCC climate negotiations, particularly around Article 6[92].

5.4. International Coordination on Industrial Decarbonisation

A key driver of concerns around carbon leakage - a motivator for introducing a carbon border measure - is the varying pace of industrial decarbonisation across different countries. Although countries making up 70% of global GDP have now committed to net-zero emissions[93], national climate policies remain divergent and industrial decarbonisation policies are largely absent.

CBAM alone will not be enough to cajole countries into a rapid shift to a low-carbon economy. Developing countries often times lack the know-how, technology and the finance to support industrial

[89] Global green value chains – Greening China's "soft commodity" value chains, CCICED, September 2020
[90] Climate clubs: Overcoming free-riding in international climate policy, American Economic Review, 2015
[91] A carbon club?, E3G, February 2021
[92] Expert interview by E3G; Why the EU's proposed carbon border must not be used to launch a carbon club, World Economic Forum, June 2021
[93] The race to zero emissions, and why the world depends on it, UN News, December 2020

decarbonisation. CBAM provides an opportunity for the EU to enter into more positive discussion with international partners on how to accelerate the decarbonisation of heavy industries[94]. This would, at the very least, involve the EU using revenues from the CBAM to support climate mitigation efforts in developing countries, but could also broaden up to include coordination on ambition, technology, standards, policy learnings and sustainable finance.

With geopolitical tensions running high, any discussions regarding technology transfer, particularly those around intellectual properties (IP), is likely to be contentious. By contrast, non-IP issues such as technical assistance on the use of acquired technology and innovation policies[95], are areas that countries are more likely to find common ground on.

The concentrated nature of some carbon-intensive product supply chains means coordination by a relatively small number of state and non-state actors could generate impact globally. Emissions from the production of steel, cement, plastic, paper and aluminium accounts for 20% of global carbon emissions, with 90% of steel produced in less than 20 countries[96].

The G7 Leaders recently launched a joint Industrial Decarbonisation Agenda that aims to boost cooperation among G7 members on regulation, research and procurement strategies for high-emitting industries[97]. The UK and India have led efforts within the Clean Energy Ministerial, of which China is a member, to facilitate countries to collaborate on government procurement strategies to create a market demand for low-carbon materials. The Industrial Deep Decarbonisation Initiative (IDDI) aims get ten countries to make public procurement commitments for low-carbon steel and cement in the next three years[98].

5.5. Regional cooperation

There is an increasing number of countries promoting climate objectives through their trade policies. As discussed in Section 2.2 of this paper, the EU sees its trade policy as a tool to promote its environmental and climate goals. The US has recently signed up to that view in a joint statement after the EU-US Summit in June 2021, in which both agreed to "use trade to help fight climate change, protect the environment, promote workers' rights, expand resilient and sustainable supply chains"[99]. There are also emerging regional trade initiatives that include provisions to actively promote a low-carbon transition, including the New Zealand-led Agreement on Climate Change, Trade and Sustainability (ACCTS) and tariff cuts on green goods within the Asia-Pacific Economic Cooperation (APEC).

Like-minded countries that share similar long-term decarbonisation goals could work together through trade and investment agreements to promote green investment, ensure coherence between green industrial policies, including mutual understanding on state subsidies with environmental priorities; or enter into regional custom unions, permitted under Article XXIV (5) of GATT, that aims to reduce tariffs on environmental goods[100].

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[94] Navigating the politics of border carbon adjustments, E3G, September 2020
[95] Greening international trade: pathways forward, Forum on Trade, Environment and the SDGs, May 2021
[96] Launch of the Industrial Deep Decarbonisation Initiative, Clean Energy Ministerial, June 2021
[97] G7 Industrial Decarbonation Agenda, UK G7 Presidency, June 2021
[98] Launch of the Industrial Deep Decarbonisation Initiative, Clean Energy Ministerial, June 2021
[99] EU-US Summit 2021 – Statement: Towards a renewed Transatlantic partnership, European Council, June 2021
[100] Governance to support a global green deal, Oxford University, December 2020

6. CONCLUSION

The EU's CBAM proposal was always going to be contentious, with strong pushback from trade partners throughout the last year. However, our analysis shows that the impact of the likely CBAM scenario on EU imports from China will be very small. We also find that the cost will mainly be borne by EU consumers, while importers recover most of it thanks to price increases in EU markets.

The CBAM may actually benefit some third countries, where manufacturers of finished products will bear lower costs than their European peers in markets around the world, including Europe. Opposition may appear from some European industries, refocusing the debate on internal redistribution issues.

However, opponents to the CBAM within the EU will need to propose alternatives or substitutes to the free allocation of allowances under the EU ETS. These might include the accelerated decarbonisation (likely with the help of subsidies) of a handful of sectors by the end of this decade where possible (e.g. in refining or fertilisers), with the subsequent application of product requirements in the EU market. Europe's trading partners might not end up better off with such measure.

Opponents from outside the EU might also want to consider how they will end up tackling climate change and the effect it may have on their own external trade. Challenging the European CBAM could prevent them from implementing their own in the future.

The pilot phase in the proposed regulation from 2023-2025 will give trade partners time to adjust to the mechanism without being exposed to any financial burden. For China, this could mean an opportunity to drive the economic transformation towards low carbon production.[101]

China's recently launched ETS will influence the impact of the CBAM, although the carbon price deviation between China and the EU will likely play a role. The proposal is explicit in that policies based on carbon pricing approaches will be taken into account and there is a short reflection on the fact that the CBAM will implicitly account for regulatory ambition.

For developing countries, the biggest sticking point will be the lack of a waiver for LDCs, while 100% of revenues are reserved for the EU budget. However, the Commission has signalled that "the EU stands ready to work with low and middle-income countries towards the decarbonisation of their manufacturing industries. The Union should support less developed countries with the necessary technical assistance to facilitate their adaptation to the new obligations established by this regulation."[102] A successful CBAM would be one, which also helps producers in developing countries invest in cleaner technologies, allowing them to both compete in the single market and reduce emissions at home.

More broadly there is welcome language on pursuing dialogue with third countries, ensuring space for cooperation and opening the possibility of trade partners helping to inform specific choices that will be made on the details of the design of the measure.

Overall, the current design of the proposed CBAM with a narrow sectoral and emissions scope (only a handful of sectors and only direct emissions) suggest that the proposal aims more at triggering concerted international action than resolving carbon leakage singlehandedly. This also suggests that more measures

[101] China wary of socio-economic impact of unregulated carbon market , S&P Global Plats, 7 July 2021
[102] Carbon Border Adjustment Mechanism, European Commission, 14 July 2021

will be taken to address the remaining sectors, which might find importers in the CBAM-covered sectors comparatively well treated.

The CBAM proposal has already stimulated a discussion on the broader nexus of climate and trade. Countries will need to introduce a suite of measures that balance limiting the risk of carbon leakage with facilitating the trade of low-carbon technologies in order to drive a speedy and just transition towards climate neutrality. The CBAM proposal is thus likely to spur discussions on the climate and trade agenda at the WTO, on product requirements, climate clubs as well as international coordination on industrial decarbonisation and regional cooperation.

Annex I – Products covered by proposed CBAM Regulation (July 2021)

(some product types presented at 2-digit or 4-digit level have been expanded for more precision)

Product	Exported to EU from China in 2019 (€)	Quantity (100kg)	Value per t (€)
MINERAL FUELS, MINERAL OILS AND PRODUCTS OF THEIR DISTILLATION; BITUMINOUS SUBSTANCES; MINERAL WAXES			
2716 Electrical energy	0	0	#DIV/0!
SALT; SULPHUR; EARTHS AND STONE; PLASTERING MATERIALS, LIME AND CEMENT			
252310 Cement clinkers	2,761,403	83,379	331
252321 White portland cement, whether or not artificially coloured	7,603	256	296
252329 Portland cement (excl. white, whether or not artificially coloured)	39,215	953	411
252390 Cement, whether or not coloured (excl. portland cement and aluminous cement)	119,363	1,966	607
ALUMINIUM AND ARTICLES THEREOF			
7601 Unwrought aluminium	13,622,866	58,416	2,332
7603 Powder and flakes, of aluminium (excl. pellets of aluminium, and spangles)	5,191,867	11,310	
7604 Bars, rods and profiles, of aluminium, n.e.s.	384,511,127	1,234,023	3,116
7605 Aluminium wire (excl. stranded wire, cables, plaited bands and the like and other articles of heading 7614, electrically insulated wires, and strings for musical inst	13,351,078	36,008	3,708
7606 Plates, sheets and strip, of aluminium, of a thickness of > 0,2 mm (excl. expanded plates, sheets and strip)	607,132,275	2,912,761	2,084
7607 Aluminium foil, "whether or not printed or backed with paper, paperboard, plastics or similar backing materials", of a thickness "excl. any backing" of <= 0,2 mm (	397,611,570	1,388,325	2,864
7608 Aluminium tubes and pipes (excl. hollow profiles)	65,909,735	173,113	3,807
7609 Aluminium tube or pipe fittings "e.g., couplings, elbows, sleeves"	58,188,476	51,390	11,323
Fertilisers			
2808 Nitric acid; sulphonitric acids	1,349	2	8,647
281410 Anhydrous ammonia	247,056	574	4,304
281420 Ammonia in aqueous solution	0	0	#DIV/0!
2814S5 Confidential trade of heading 2814 and SITC section 5	0	0	#DIV/0!
2834 Nitrites; nitrates	18,040,223	351,461	513
310210 Urea, whether or not in aqueous solution (excl. that in tablets or similar forms, or in packages with a gross weight of <= 10 kg)	2,074,864	50,391	412
310221 Ammonium sulphate (excl. that in tablets or similar forms, or in packages with a gross weight of <= 10 kg)	18,097,498	1,264,229	143
310229 Double salts and mixtures of ammonium sulphate and ammonium nitrate (excl. goods of this chapter in tablets or similar forms or in packages of a gross weigh	78,398	2,649	296
310230 Ammonium nitrate, whether or not in aqueous solution (excl. that in tablets or similar forms, or in packages with a gross weight of <= 10 kg)	3,235	3	11,272
310240 Mixtures of ammonium nitrate with calcium carbonate or other inorganic non-fertilising substances for use as fertilisers (excl. those in tablets or similar forms,	182,584	7,710	237
310250 Sodium nitrate (excl. that in tablets or similar forms, or in packages with a gross weight of <= 10 kg)	180,684	5,372	336
310260 Double salts and mixtures of calcium nitrate and ammonium nitrate (excl. those in tablets or similar forms, or in packages with a gross weight of <= 10 kg)	5,623,381	236,783	237
310270 Calcium cyanamide (excl. that in pellet or similar forms, or in packages with a gross weight of <= 10 kg)	0	0	#DIV/0!
310280 Mixtures of urea and ammonium nitrate in aqueous or ammoniacal solution (excl. those in packages with a gross weight of <= 10 kg)	8,467	91	930
310290 Mineral or chemical nitrogen fertilisers (excl. urea; ammonium sulphate; ammonium nitrate; sodium nitrate; double salts and mixtures of ammonium nitrate w	1,977,999	17,108	1,156
3102S5 Confidential trade of heading 3102 and SITC section 5	0	0	#DIV/0!
310510 Mineral or chemical fertilisers of animal or vegetable origin, in tablets or similar forms, or in packages with a gross weight of <= 10 kg	270,247	1,198	2,256
310520 Mineral or chemical fertilisers containing the three fertilising elements nitrogen, phosphorus and potassium (excl. those in tablets or similar forms, or in packag	1,050,530	14,984	701
310530 Diammonium hydrogenorthophosphate "diammonium phosphate" (excl. that in tablets or similar forms, or in packages with a gross weight of <= 10 kg)	1,314,503	16,284	807
310540 Ammonium dihydrogenorthophosphate "monoammonium phosphate", whether or not mixed with diammonium hydrogenorthophosphate "diammonium phos	18,393,483	296,163	621
310551 Mineral or chemical fertilisers containing nitrates and phosphates (excl. ammonium dihydrogenorthophosphate "Monoammonium phosphate", diammonium h	278,073	4,079	682
310559 Mineral or chemical fertilisers containing the two fertilising elements nitrogen (excl. nitrate) and phosphorus but not nitrates (excl. ammonium dihydrogenorth	2,512,993	37,460	671
310590 Mineral or chemical fertilisers containing the two fertilising elements nitrogen and potassium or one principal fertilising substance only, incl. mixtures of anima	4,285,608	45,537	941
3105S5 Confidential trade of heading 3105 and SITC section 5	0	0	#DIV/0!
ARTICLES OF IRON OR STEEL			
7301 Sheet piling of iron or steel, whether or not drilled, punched or made from assembled elements; welded angles, shapes and sections, of iron or steel	37,387,821	548,482	682
7302 Railway or tramway track construction material of iron or steel, the following : rails, check-rails and rack rails, switch blades, crossing frogs, point rods and other c	10,864,045	61,515	1,766
7303 Tubes, pipes and hollow profiles, of cast iron	12,194,269	130,295	936
7304 Tubes, pipes and hollow profiles, seamless, of iron or steel (excl. products of cast iron)	101,053,001	849,842	1,189
7305 Tubes and pipes, having circular cross-sections and an external diameter of > 406,4 mm, of flat-rolled products of iron or steel "e.g., welded, riveted or similarly cl	41,460,679	483,374	858
7306 Tubes, pipes and hollow profiles "e.g., open seam or welded, riveted or similarly closed", of iron or steel (excl. of cast iron, seamless tubes and pipes and tubes hav	101,992,950	587,707	1,735
7307 Tube or pipe fittings "e.g. couplings, elbows, sleeves", of iron or steel	698,070,752	2,183,716	3,197
7308 Structures and parts of structures "e.g., bridges and bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frameworks, doors and windows and their fra	1,084,982,933	6,458,230	1,680
7309 Reservoirs, tanks, vats and similar containers, of iron or steel, for any material "other than compressed or liquefied gas", of a capacity of > 300 l, not fitted with m	25,387,985	76,921	3,301
7310 Tanks, casks, drums, cans, boxes and similar containers, of iron or steel, for any material "other than compressed or liquefied gas", of a capacity of <= 300 l, not fit	144,172,104	316,357	4,557
7311 Containers of iron or steel, for compressed or liquefied gas (excl. containers specifically constructed or equipped for one or more types of transport)	55,634,998	232,960	2,388

IRON AND STEEL			
7201 Pig iron and spiegeleisen, in pigs, blocks or other primary forms	255,624	660	3,871
7203 Ferrous products obtained by direct reduction of iron ore and other spongy ferrous products, in lumps, pellets or similar forms; iron having a minimum purity by w	120,766	1,441	838
7205 Granules and powders of pig iron, spiegeleisen, iron or steel (excl. granules and powders of ferro-alloys, turnings and filings of iron or steel, radioactive iron powd	28,149,652	129,602	2,172
7206 Iron and non-alloy steel in ingots or other primary forms (excl. remelting scrap ingots, products obtained by continuous casting and iron of heading 7203)	9,534,959	5,280	18,060
7207 Semi-finished products of iron or non-alloy steel	31,181,081	390,340	799
7208 Flat-rolled products of iron or non-alloy steel, of a width >= 600 mm, hot-rolled, not clad, plated or coated	7,556,619	92,356	818
7209 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, cold-rolled "cold-reduced", not clad, plated or coated	3,099,432	44,932	690
721011 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", tinned, of a thickness of >= 0,5 mm	179,613	2,003	897
721012 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", tinned, of a thickness of < 0,5 mm	181,721,118	2,161,394	841
721020 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", plated or coated with lead, incl. terne-plate	34,024	347	982
721030 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", electrolytically plated or coated with zinc	1,632,830	23,189	704
721031 Flat-rolled products of iron or non-alloy steel, of a width >= 600 mm, hot-rolled or cold-rolled "cold-reduced", electrolytically plated or coated with zinc, of a thi	0	0	#DIV/0!
721039 Flat-rolled products of iron or non-alloy steel, of a width >= 600 mm, hot-rolled or cold-rolled "cold-reduced", electrolytically plated or coated with zinc (excl. p	0	0	#DIV/0!
721041 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", corrugated, plated or coated with zinc (excl. el	673,607	9,963	676
721049 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", not corrugated, plated or coated with zinc (exc	717,115,128	11,090,292	647
721050 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", plated or coated with chromium oxides or with	54,196,446	712,437	761
721060 Flat-rolled products of iron or non-alloy steel, of a width >= 600 mm, hot-rolled or cold-rolled "cold-reduced", plated or coated with aluminium	0	0	#DIV/0!
721061 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", plated or coated with aluminium-zinc alloys	27,233,077	416,543	654
721069 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", plated or coated with aluminium (excl. product	940,041	14,302	657
721070 Flat products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", painted, varnished or coated with plastics	10,123,475	102,966	983
721090 Flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", clad, plated or coated (excl. tinned, plated or c	6,443,892	90,000	716
721111 Flat-rolled products of iron or non-alloy steel, simply hot-rolled, rolled on four faces or in a box pass, of a width of > 150 mm but < 600mm, of a thickness of >=	0	0	#DIV/0!
721112 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than hot-rolled of a thickness >= 4,75 mm and having a minimum yield	0	0	#DIV/0!
721113 Flat-rolled products of iron or non-alloy steel, simply hot-rolled on four faces or in a closed box pass, not clad, plated or coated, of a width of > 150 mm but < 6(	14,041	48	2,910
721114 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than hot-rolled, not clad, plated or coated, of a thickness of >= 4,75 mm	1,604	18	877
721119 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, simply hot-rolled, not clad, plated or coated, of a thickness < 4,75 mm (excl. "wide flats")	41,019	204	2,014
721121 Flat-rolled products of iron or non-alloy steel, simply hot-rolled, rolled on four faces or in a box pass, of a width of > 150 mm but < 600mm, of a thickness of >=	0	0	#DIV/0!
721122 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than hot-rolled, of a thickness >= 4,75 mm and having a minimum yield	0	0	#DIV/0!
721123 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, simply cold-rolled "cold-reduced", not clad, plated or coated, containing by weight < 0,2	200,633	2,144	936
721129 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, simply cold-rolled "cold-reduced", not clad, plated or coated, containing by weight >= 0,2	311,110	2,131	1,460
721130 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than cold-rolled "cold-reduced", of a thickness < 3 mm and having a mir	0	0	#DIV/0!
721141 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than cold-rolled "cold-reduced", containing by weight < 0,25% of carbo	0	0	#DIV/0!
721149 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than cold-rolled "cold-reduced", containing by weight >= 0,25% of carb	0	0	#DIV/0!
721190 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced" and further worked, but not clad, plated or coat	411,401	2,876	1,430
7211S6 Confidential trade of heading 7211 and SITC section 6	0	0	#DIV/0!
721210 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", tinned	764,903	2,405	3,180
721220 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", electrolytically plated or coated with zinc	1,057,110	7,701	1,373
721221 Flat-rolled products of non-alloy steel, of a width < 600 mm, hot-rolled or cold-rolled "cold-reduced", electrolytically plated or coated with zinc, of a thickness <	0	0	#DIV/0!
721229 Flat-rolled products of iron or non-alloy steel, of a width < 600 mm, hot-rolled or cold-rolled "cold-reduced", electrolytically plated or coated with zinc (excl. thc	0	0	#DIV/0!
721230 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", tinned (excl. electrolytically plated or coated wi	966,553	4,034	2,396
721240 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", painted, varnished or coated with plastics	886,980	5,986	1,482
721250 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", plated or coated (excl. tinned, plated or coated	3,463,873	6,078	5,699
721260 Flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", clad	476,161	1,141	4,173
7212S6 Confidential trade of heading 7212 and SITC section 6	0	0	#DIV/0!
7213 Bars and rods of iron or non-alloy steel, hot-rolled, in irregularly wound coils	56,742	429	1,324
7214 Bars and rods, of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but incl. those twisted after rolling (excl. in irregu	57,112,319	851,807	670
7215 Bars and rods, of iron or non-alloy steel, cold-formed or cold-finished, whether or not further worked, or hot-formed and further worked, n.e.s.	9,732,423	95,120	1,023
7216 Angles, shapes and sections of iron or non-alloy steel, n.e.s.	27,196,254	313,827	867
721710 Wire of iron or non-alloy steel, in coils, not plated or coated, whether or not polished (excl. bars and rods)	22,385,276	222,583	1,006
721711 Wire of iron or non-alloy steel, in rings or coils, containing by weight < 0,25% of carbon, not plated or coated, whether or not polished (excl. bars and rods)	0	0	#DIV/0!
721712 Wire of iron or non-alloy steel, in rings or coils, containing by weight < 0,25% of carbon, plated or coated with zinc (excl. bars and rods)	0	0	#DIV/0!
721713 Wire of iron or non-alloy steel, in rings or coils, containing by weight < 0,25% of carbon, plated or coated with base metals (excl. plated or coated with zinc, and	0	0	#DIV/0!
721719 Wire of iron or non-alloy steel, in rings or coils, containing by weight < 0,25% of carbon, plated or coated (excl. plated or coated with base metals, and bars and	0	0	#DIV/0!
721720 Wire of iron or non-alloy steel, in coils, plated or coated with zinc (excl. bars and rods)	35,507,226	332,970	1,066
721721 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,25% but < 0,6% carbon, not plated or coated, whether or not polished (excl. hot-rolle	0	0	#DIV/0!
721722 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,25% but < 0,6% carbon, plated or coated with zinc (excl. hot-rolled bars and rods)	0	0	#DIV/0!
721723 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,25% but < 0,6% carbon, plated or coated with base metals (excl. products plated or cc	0	0	#DIV/0!
721729 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,25% but < 0,6% carbon, plated or coated (excl. products plated or coated with with ba	0	0	#DIV/0!
721730 Wire of iron or non-alloy steel, in coils, plated or coated with base metals (excl. plated or coated with zinc, and bars and rods)	41,902,653	361,614	1,159
721731 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,6% carbon, not plated or coated, whether or not polished (excl. hot-rolled bars and rc	0	0	#DIV/0!
721732 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,6% carbon, plated or coated with zinc (excl. hot-rolled bars and rods)	0	0	#DIV/0!
721733 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,6% carbon, plated or coated with base metals (excl. products plated or coated with zi	0	0	#DIV/0!
721739 Wire of iron or non-alloy steel, in reels or coils, containing by weight >= 0,6% carbon, plated or coated (excl. products plated or coated with base metals, and hc	0	0	#DIV/0!
721790 Wire of iron or non-alloy steel, in coils, plated or coated (excl. plated or coated with base metals, and bars and rods)	14,203,766	89,590	1,585
7218 Stainless steel in ingots or other primary forms (excl. remelting scrap ingots and products obtained by continuous casting); semi-finished products of stainless stee	3,089,360	5,529	5,587
7219 Flat-rolled products of stainless steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced"	565,035,200	3,227,814	1,751
7220 Flat-rolled products of stainless steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced"	13,019,904	54,782	2,377
7221 Bars and rods of stainless steel, hot-rolled, in irregularly wound coils	14,918,430	67,615	2,206
7222 Other bars and rods of stainless steel; angles, shapes and sections of stainless steel, n.e.s.	17,640,729	46,107	3,826
7223 Wire of stainless steel, in coils (excl. bars and rods)	55,830,459	175,878	3,174
7224 Steel, alloy, other than stainless, in ingots or other primary forms, semi-finished products of alloy steel other than stainless (excl. waste and scrap in ingot form, ar	10,788,569	54,519	1,979
722510 Flat-rolled products of silicon-electrical steel, of a width of >= 600 mm, hot- or cold-rolled "ECSC"	0	0	#DIV/0!
722511 Flat-rolled products of silicon-electrical steel, of a width of >= 600 mm, grain-oriented	14,279,275	70,901	2,014
722519 Flat-rolled products of silicon-electrical steel, of a width of >= 600 mm, non-grain-oriented	25,685,355	393,490	653
722520 Flat-rolled products of high-speed steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced"	0	0	#DIV/0!
722530 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, not further worked than hot-rolled, in coils (excl. products of silicon-electrical s	29,253	164	1,788
722540 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, not further worked than hot-rolled, not in coils (excl. products of silicon-electri	24,198,663	216,660	1,117
722550 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, not further worked than cold-rolled "cold-reduced" (excl. products of silicon-el	46,114	142	3,254
722590 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, hot- or cold-rolled and further worked (excl. products of high-speed steel or sili	0	0	#DIV/0!
722591 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced" and electrolytically plated or coated wi	76,705	938	818
722592 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced" and plated or coated with zinc (excl. el	33,902,356	486,910	696
722599 Flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced" and further worked (excl. plated or coa	452,301	4,436	1,020
7225S6 Confidential trade of heading 7225 and SITC section 6	0	0	#DIV/0!
7226 Flat-rolled products of alloy steel other than stainless, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced"	11,159,888	41,434	2,693
7227 Bars and rods of alloy steel other than stainless, hot-rolled, in irregularly wound coils	25,542	44	5,854
7228 Other bars and rods of alloy steel other than stainless, angles, shapes and sections of alloy steel other than stainless, n.e.s.; hollow drill bars and rods, of alloy or n	392,774,147	4,118,114	954
7229 Wire of alloy steel other than stainless, in coils (excl. bars and rods)	83,590,355	850,340	983
72CC Corrections due to erroneous codes belonging to chapter 72	0	0	#DIV/0!
72II Components of complete industrial plants of chapter 72	0	0	#DIV/0!
72MM Trade broken down at chapter level only	0	0	#DIV/0!
72SS Confidential trade of chapter 72	221,982	947	2,345
Grand Total	**6,499,917,308**	**47,640,895**	

Annex II – Emission intensities and assumptions

Product type	EU scope 1 10% least efficient	China scope 1 avg Carbon Intensity	China scope 2 avg Carbon Intensity	Free Allocation 2021-2025
Iron and steel products				
Hot metal	2.32	2.1	0.14	1.7
EAF carbon steel	0.38	0.07	0.43	0.05
EAF high allow steel	0.42	0.14	0.43	0.08
Aluminium products				
Aluminium	3.72	4.24	8.31	2.35
Aluminium extrusion	3.96	4.48	10.5	2.39
Aluminium sheet	3.95	4.46	9.96	2.37
Aluminium foil	4.7	5.22	10.23	2.77
Fertilisers				
Ammonia	2.4	1.84	0.1	1.52
Urea	1.12	1.89	0.1	0.87
Ammonium nitrate	1.45	3.32	0.18	1.75
Fertilisers from animal or vegetal origin	-	-	-	-
Other fertilisers containing nitrogen	1.2	0.92	0.05	0.76
Nitric acid	1.35	2.86	2.15	1.75
Anhydrous ammonia	2.93	3.98	0.22	1.52
Cement products				
Grey cement clinker	0.86	0.85	-	0.69
Other hydraulic cements	0.48	0.41	-	0.26
White Portland cement	0.83	0.68	-	0.71
Portland Cement	0.63	0.54	-	0.51

Assumptions on Steel products:

- Flat products, as well as pipes, containers and railway materials, use Hot Metal process
- Long products, as well as structures for the buildings sector, use EAF process
- EAF uses scrap as input and no other steel or iron input

Assumptions on Fertilisers

- Fertilisers containing nitrogen as one of two or three components are assumed to be 50% ammonia

Assumptions on Cement products

- “Cement clinkers” are assumed to be grey clinker

“Other hydraulic cements” are assumed to have 75% emission intensity than grey Portland cement

Annex III – Main stakeholder positions on CBAM

European Commission

The European Commission is currently in the process of refining its CBAM proposal before its July delivery date. In absence of the final proposal, we can observe how the Commission's approach has developed over time through its public statements and consultation processes.

Design of the CBAM

In the July-October public consultation, the Commission presented four options for the CBAM: a customs duty; participation of importers in the EU ETS; a separate pool of emission allowances mirroring the EU ETS; or a consumption charge on all imported and domestic goods.

By December 2020, the detailed Impact Assessment commissioned by the European Commission focused on three potential options:

- CBAM is applied to imports, replacing free allocation. Importers purchase notional ETS allowances based on a reference value benchmark or verified emissions.
- CBAM is applied to imports and exports, replacing free allocation. Importers purchase notional ETS allowances based on a reference value benchmark or verified emissions. EU exporters are exempted from the carbon price.
- An excise and customs duty is applied to all domestic production and imports. The liability is paid when the product leaves the duty suspension regime. Free allocation is retained. The carbon price does not apply to exports.

The latest information suggests that while both excise and notional ETS options are still on the table, the latter is preferable as it is easier to implement. It would be more difficult to come to an agreement between the EU states on an excise measure, and so this would be unlikely to be implemented by the January 2023 deadline. The excise option would also require the retention of free allowances, while the Commission has repeatedly stated that the introduction of the CBAM should coincide with the phase-out of free allocation[103].

Sector Coverage

In terms of the sectors and products to be covered by the CBAM, the Commission has proposed to start with a few core sectors (e.g. steel, cement, fertilisers, aluminium, glass, ceramics, paper), then expand to cover all sectors at risk of carbon leakage. The EU already has a Carbon Leakage List used for calculating free allocation, which covers approximately 65 product sectors[104]. After an initial phase covering these sectors at risk of carbon leakage, the CBAM could be extended to cover manufactured products containing basic emissions-intensive materials[105].

Equivalence treatment

The European Commission's Vice-President for the European Green Deal, Frans Timmermans, has stated publicly that the CBAM measure should take into account the climate policies of the EU's trading partners.

[103] Carbon border levy should start with steel, cement and fertilisers, says Poland, Euractiv. April 2021
[104] Commission Delegated Decision (EU) 2019/708, European Commission, 2019
[105] Carbon border levy should start with steel, cement and fertilisers, says Poland, Euractiv. April 2021

The proposed CBAM will factor in the price differences between the EU and its trading partners, caused by a lack of measures from the latter to achieve climate neutrality by 2050. As other countries move more quickly towards the goals of the Paris Agreement, according to Timmermans, there will be less and less need for carbon border adjustments[106].

EU Member States

There is no homogenous position on the CBAM among the EU's Member States. As is often the case with EU climate policy, there is somewhat of an East-West divide. Member States in the West and North of Europe, which have stronger economies and are generally more advanced along the energy transition, tend to pursue more progressive policies. States in the East and South-East, with lower-than-average GDP and energy systems that still rely heavily on fossil fuels, express more misgivings about the speed of the transition, and about their perception that other countries are free-riding on the EU's climate ambition.

French proposal

The French government has proposed that the CBAM could first be implemented for sectors most exposed to carbon leakage, through a mechanism that mirrors the EU ETS. The CBAM should be calculated using the EU average emissions intensity as a default value for the carbon intensity of products. The mechanism should also allow importers to prove the specific carbon intensity of their products. The French proposal also states that the CBAM should take the climate policies of third countries into account[107].

Free allocation

To date, the major debate on the CBAM among Member States is on the issue of free allocation. Government representatives from France, Germany, Denmark, Sweden, Austria, Lithuania, Luxemburg, Spain and the Netherlands have all stressed the necessity that the CBAM must be compatible with WTO rules. While this is generally interpreted to mean that the CBAM is an alternative to free allocation, some Member States have been more explicit than others. For example, Sweden has clearly called for an end to free allocation, while France has been more nuanced, saying that, with time, the CBAM will be a better means of carbon leakage protection than free allocation. At the same time, the Polish, Czech, Slovak and Hungarian governments have called for a complementary operation of the two mechanisms, which are said to fulfil two different purposes.

Sector Coverage

In terms of the sector coverage of the CBAM, France has specifically mentioned steel and cement as sectors that could be covered, while Poland also called for steel, cement and fertilisers to be included under the CBAM[108].

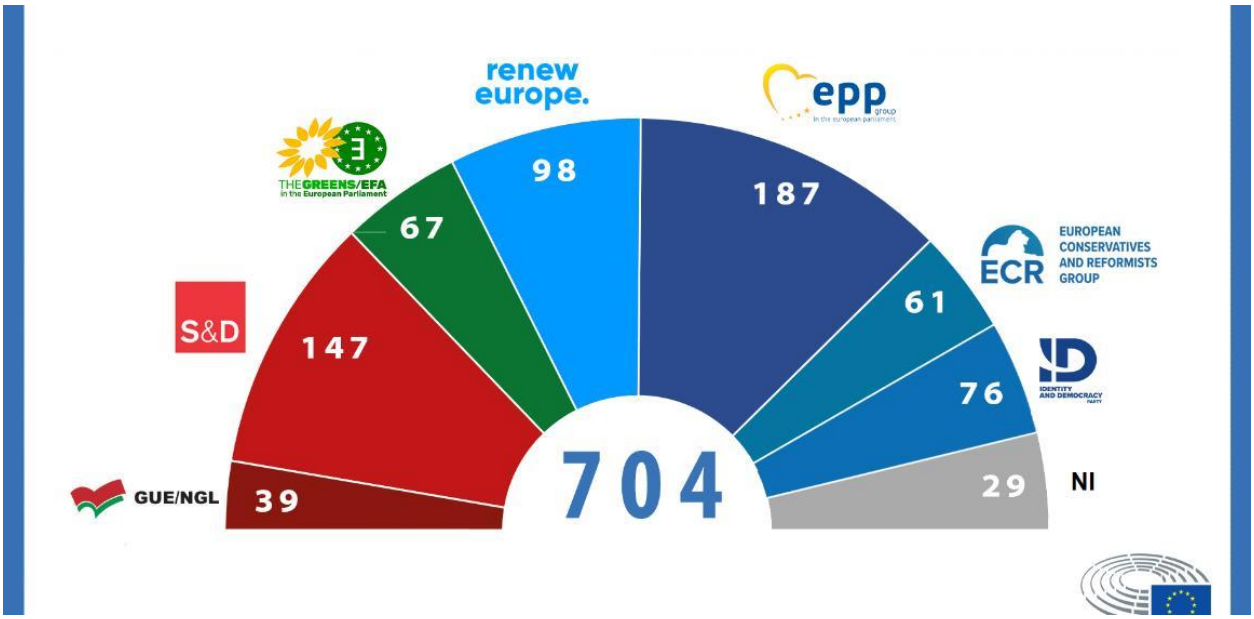
Revenue Use

[106] Timmermans promises surgical carbon border tax, ENDS Europe, February 2021
[107] Réponse des autorités françaises aux consultations publique sde la Commission sur la révision des textes législatifs sur le climat: ETS, ESR, LULUCF, standards d'émission de CO2 des véhicules légers, Government of France, February 2021
[108] Carbon border levy should start with steel, cement and fertilisers, says Poland, Euractiv. April 2021

There is agreement among Member States that the revenues of the CBAM should be used as an EU own resource, to service the debt of the Recovery Fund[109].

European Parliamentarians

The European Parliament is primarily divided along political lines, although MEPs may also choose to act upon their national interest. An illustration of the different political groupings in the Parliament, from left to right in terms of ideology, can be seen below.



Source: Parliament's seven political groups, European Parliament, July 2019

The current configuration of the European Parliament means that the centre right EPP group often have the swinging power to determine the outcome of a vote. The left-wing, green and centrist groups can obtain a slim majority if united, but most files will require the support of at least some of the EPP MEPs in order to be approved by the Parliament.

The Parliament's Own Initiative Report provided a good overview of the stances of the different political groups on the CBAM. The majority of Parliamentarians supported the report's endorsement of the CBAM, to cover the power sector and energy-intensive sectors as a first step, and finally to cover all basic materials covered by the EU ETS, and manufactured products containing these materials. The report does not specify which form the CBAM should take, but it does consider that it needs to track closely the ETS carbon price. As well as acknowledging a role for the CBAM revenues as an EU own resource, the report also states that the revenues could go to international climate finance[110].

Emissions Intensity Scope

[109] Interinstitutional Agreement of 16 December 2020 between the European Parliament, the Council of the European Union and the European Commission on budgetary discipline, on cooperation in budgetary matters and on sound financial management, as well as on new own resources, including a roadmap towards the introduction of new own resources, European Institutions, December 2020

[110] Procedure File 2020/2043 (INI): Towards a WTO-compatible EU carbon border adjustment mechanism, Legislative Observatory, 2021

The Parliament's report states that "the GHG emissions content of imports should be accounted for on the basis of transparent, reliable and up-to-date product-specific benchmarks at the level of the installations in third countries and that, as a default, if data is not made available by the importer, account should be taken of the global average GHG emissions content of individual products, broken down by different production methods with varying emission intensities; […] that the carbon pricing of imports should cover both direct and indirect emissions and therefore also take into account the country-specific carbon intensity of the electricity grid or, if data is made available by the importer, the carbon intensity of the energy consumption at the level of the installation."

Free Allocation

Once again, free allocation was the major sticking point in the CBAM debate. While the original version of the report called for a phase-out of free allocation in line with the introduction of the CBAM, a last-minute amendment to remove this element received majority support. The vast majority of the far right (ECR, ID) and centre right (EPP) MEPs sought to defend free allocation (with the notable exception of the French EPP delegation), along with about 20 MEPs from both the centrist (Renew) and socialist (S&D) groups. The remainder of the Renew and S&D MEPs voted to retain mention of the phase-out of free allocation, along with the Green and Left groups.

While the vote on the Own Initiative report was not legally binding, it draws the battle grounds for the debate on the actual legislative file.

Energy-intensive industries

Traditionally, industry has preferred free allocation to a CBAM, as it is a system with which they are familiar, under which they are well insulated from the carbon costs of the EU ETS, and from which some actors have gained windfall profits[111]. As a CBAM is an unknown system, there is a lack of confidence among industry actors that it will be well implemented and provide real carbon leakage protection. However, with the CBAM now firmly on the table, many European industries are getting involved in the debate.

The responses to the Commission's Inception Impact Assessment and Public Consultation show that some sectors are more enthusiastic about the CBAM than others. The steel, cement and power sectors, for example, are open to inclusion under the measure. The non-ferrous metals sector, including aluminium producers, has asked not to be included under preliminary phases of the CBAM, due to their high indirect carbon costs. Representatives of the ceramics sector voiced a preference for retaining existing carbon leakage protections. Actors in the power sector have been positive about a CBAM on electricity, but have questioned what the impact of a CBAM applied to basic materials would be on the renewable energy sector, as the production of renewable infrastructure requires a lot of emissions-intensive materials. Within the chemicals sectors, some actors have expressed an openness to a CBAM as one potential measure to tackle the emissions of imports (provided free allocation is maintained), while others are firmly opposed as the benefits of a CBAM would not outweigh the risks for their sector[112].

As for the design of the CBAM, the fertilisers, steel and cement sector, among others, have called for the CBAM to include export rebates for European producers. The steel sector has called for coverage of

[111] The Cement Industry of the Future, Sandbag, 2017

[112] Summary Report: Public Consultation on the Carbon Border Adjustment Mechanism, European Commission, 2021

indirect and, where relevant, life-cycle emissions under the CBAM. The ceramics and chemicals industry are among those promoting that the revenues from the CBAM are recycled into financial support for industrial decarbonisation (Consultation[113], ERCST[114]). Further down the value chain, EU-based producers of manufactured projects voiced concern over the impacts a CBAM only covering basic materials would have on their sectors, calling instead for products all along the value chain to be placed under a CBAM (e.g. European Bicycle Manufacturers' Association, NLMK DanSteel, Fachvereinigung Kaltwalzwerke, Glass for Europe). There is broad agreement among energy-intensive industries in Europe that the CBAM should be complementary to, and not a replacement for, free allocation. The preservation of free allocation is a central demand of most emissions-intensive industry federations. However, there is a small number of industry front-runners who see the CBAM as an opportunity to reform or remove free allocation (Cem'In'EU)[115].

[113] Summary Report: Public Consultation on the Carbon Border Adjustment Mechanism, European Commission, 2021
[114] Border Carbon Adjustment Submissions Synthesis to Inception Impact Assessment, ERCST, 2020
[115] Summary Report: Public Consultation on the Carbon Border Adjustment Mechanism, European Commission, 2021