Navigating the European Union's Carbon Border Adjustment Mechanism

An exporter's technical guide

IISD GUIDE

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June 2026

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Written by George Riddell and Antoine Bonnet

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Acknowledgements

The authors gratefully acknowledge the helpful comments and feedback of Alice Tipping, Darcie Doan, and Aaron Cosbey (IISD).

The authors also thank Global Affairs Canada for its financial support through the Emissions Ambition for Sustainable Economies in Southeast Asia (EASE-SEA) project.

Executive Summary

As of January 2026, importers of select heavy industrial goods to the European Union (EU) face real and growing liabilities under the EU's Carbon Border Adjustment Mechanism (CBAM). However, financial penalties and technical requirements not only impact importers. CBAM rules also have important implications for exporters of CBAM-covered goods to the EU. This technical guide was written with exporters in mind. It explains the CBAM rules that currently apply and their implications for market access, compliance, and costs. The guide is designed as a practical reference for exporters: readers can use it either as a step-by-step overview or may refer directly to the sections of greatest interest. This guide should be viewed as a complement to, rather than a substitute for, CBAM-related information published by the European Commission.

When the EU CBAM entered its definitive phase, it changed from a reporting-only system to one that imposes binding compliance obligations and financial costs. For exporters in the iron and steel, aluminum, cement, fertilizers, electricity, and hydrogen sectors, this marks a structural shift: failure to provide verified actual emissions data can result in significantly higher CBAM costs and reduced competitiveness in the EU market. The exporting country's domestic carbon pricing policies also present an opportunity to reduce costs under the EU CBAM in the years ahead.

From January 2026, three core compliance obligations were introduced. Taken together, these aim to ensure that imports of covered goods face costs roughly equal to the costs faced by EU producers of the same goods.

1. Only "Authorised CBAM Declarants" can import covered goods into the EU, and they are subject to annual reporting requirements.
2. Embedded emissions in import shipments must be reported using either actual or default emissions-intensity values. Self-declared emissions data is not sufficient. All reported "actual embedded emissions" must be reported according to defined methodologies and verified by an EU-accredited third-party verifier. Default values are defined and published by the EU for most country-product combinations.
3. Importers must purchase CBAM certificates from national authorities to cover the emissions embedded in imported goods. The price of these certificates is linked to EU Emissions Trading System (ETS) allowance prices.

Use of Default Values vs. Actual Emissions

Default values are emissions-intensity figures set by the European Commission for each product category and country of origin. The choice to use default emissions-intensity values set by the EU rather than actual emissions-intensity data provided by the exporting producer has very important cost implications. Default values are intentionally set at a high level and will increasingly disadvantage exporters that do not provide verified data.

Default values are conservatively estimated and include annual markups that increase over time: +10% in 2026, +20% in 2027, and +30% from 2028 onward.[1] If the country of origin cannot be determined, an even higher "other country" default value applies. One of the most important cost drivers under CBAM, therefore, is whether exporters provide verified actual emissions data or instead rely on default values. Reliance on defaults is expected to substantially increase costs over time.

Investment in the robust monitoring, reporting, and verification (MRV) systems that are needed for verified actual emissions reporting under CBAM is therefore a competitive priority. Furthermore, some producers will have to ask their input suppliers to implement similar MRV systems so that total embedded emissions can be tracked and reported.

Take the case of flat-rolled steel (Combined Nomenclature [CN] 7210) from Vietnam as an example. While the overall impact of CBAM on Vietnamese exports is moderate, with only 0.7 % of exports covered by EU CBAM, about 20% of Vietnamese steel exports go to the EU (2022–2024 average).[2] Vietnam's country-specific 2026 default value translates into a CBAM cost of approximately EUR 87–150 per tonne of imported flat-rolled steel—equivalent to an ad valorem tariff (a percentage-based import duty) of 12%–22%. In most cases, providing verified actual emissions will result in significantly lower CBAM costs for Vietnamese exporters.

Cost Trajectory

The financial impact of CBAM is expected to increase significantly over the coming decade, driven by two structural factors. Firstly, the phase-out of free allocations under the EU ETS, which are scheduled to be complete by 2034, will lead to a correspondingly higher share of imported emissions being covered by CBAM. Secondly, rising EU carbon prices, projected by industry forecasters (e.g., BloombergNEF, 2025; ICIS, 2025) to increase from around EUR 65–80 per tonne in 2025 to EUR 150–200 per tonne by 2034, will translate into correspondingly higher charges for CBAM certificates. Together, these trends are expected to transform CBAM from a relatively modest cost in 2026 into a substantial one within a few years.

Deduction of Carbon Prices Paid Domestically

Carbon prices paid in the country of origin of a good may be deducted from the CBAM liability. This reflects the EU's intention to avoid charging twice for the same emissions.

Exporters who face an explicit carbon price at home should therefore document the carbon costs they have paid, and ensure this information is available for compliance purposes under CBAM. In May 2026, the European Commission published a draft Implementing Regulation setting out which carbon prices qualify for deduction and how the reduction is calculated; it is not yet in force, and its details may still change (see Box 1 in Section 8).

[1] Except for fertilizers, for which the markup is 1% across all years.

[2] Source: Authors' calculations based on CEPII (2025); Annex I to Regulation (EU) 2023/956 establishing a Carbon Border Adjustment Mechanism.

Overall Competitive Implications

- Supply chain transparency is increasingly important: In order to use actual emissions values for complex goods, exporters must obtain verified emissions data from upstream suppliers. Where this is not possible, default values apply.
- Carbon pricing alignment matters: CBAM liabilities can be reduced where a carbon price has been effectively paid in the country of origin through mechanisms such as emissions trading systems or carbon taxes.
- First movers gain advantage: Exporters with credible, verified emissions data will face lower costs and maintain a competitive edge in the EU market.

Priority Actions for Businesses

Exporters of CBAM-covered goods to the EU should take early and coordinated action across three phases to reduce CBAM costs. The detailed operational steps for each action area are set out in Section 10 of this guide.

Phase 1: Preparation and gap analysis

Exporters should

- confirm that their EU importer of record holds or has applied for Authorised CBAM Declarant status
- establish MRV readiness by conducting a gap analysis of current emissions monitoring against EU requirements and engaging an EU-accredited verifier for a pre-verification of 2025 data
- ensure that data and IT systems can generate complete, auditable emissions data in the formats required by EU verifiers
- engage an EU-accredited verifier for a pre-verification of 2025 data.

Phase 2: Operational implementation

Exporters should

- secure verified actual emissions data from suppliers of relevant inputs
- maintain records of any carbon price effectively paid in the country of origin to support deduction claims
- submit a verified CBAM declaration of 2026 emissions to the CBAM Registry by the statutory deadline of 30 September 2027.

Phase 3: Strategic decarbonization and regulatory developments tracking

Over the longer term, exporters should:

- build the business case for capital investment in low-carbon production processes and technologies
- continue to monitor regulatory developments in the EU, including potential expansion of CBAM to additional products or types of emissions.

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Glossary

Authorised CBAM Declarant	An importer authorized by a competent national authority in an EU member state to import CBAM goods into the EU in the definitive period.
CBAM Certificate	A digital certificate corresponding to 1 tonne of CO_2e embedded emissions.
CN (Combined Nomenclature) code	The 8-digit classification system used by the EU for customs and trade under the World Customs Organization Harmonized System.
Default value	A value calculated by the European Commission for emissions intensity used when actual emissions data is unavailable.
Direct emissions	Emissions from the production processes of goods, including emissions from the production of heating and cooling consumed during the production processes.
Embedded emissions	Direct and indirect emissions of greenhouse gases released during the production of goods and their precursors.
ETS (Emissions Trading System)	The EU's "cap-and-trade" system where a limit is set on the total amount of greenhouse gases that can be emitted by covered installations in the EU in a given year.
Indirect emissions	Emissions from the production of electricity that is consumed during the production processes of goods.
Installation	A stationary technical unit where one or more activities producing CBAM goods are carried out.
Melt and pour	A rule of origin for steel products determined by the location where the raw steel was first produced in liquid form.
NAB (National Accreditation Body)	The national body in an EU member state responsible for accrediting verifiers.
NCA (National Competent Authority)	The authority designated by each EU member state to manage CBAM declarants and compliance.
Precursor	A simple or complex good that has embedded emissions and is used as an input material in the production of another complex good.

1.0 Introduction

Key takeaways

- The Carbon Border Adjustment Mechanism (CBAM) moves from transitional reporting to financial liability from 2026 onward.
- Covered sectors are iron and steel, aluminum, cement, fertilizers, hydrogen, and electricity.
- Iron and steel plus aluminum account for roughly 85% of the value of European Union (EU) imports of CBAM goods.
- CBAM is meant to reduce carbon leakage by aligning the carbon cost of imports with that faced by EU producers.
- For exporters, emissions data and coordination with EU buyers are now core commercial and strategic issues.

The EU's CBAM entered into force in 2023. From October 2023 until December 2025, however, the EU CBAM was in its "transition period," where importers in the EU only had to report on the amount of embedded emissions in the products imported. The "definitive period" of EU CBAM began on January 1, 2026. In the definitive period, financial liabilities apply to EU imports of CBAM-covered goods.

This document is a technical guide for businesses exporting CBAM-covered goods to the EU. It outlines the rules applicable during the CBAM definitive period and explains their implications for market access, compliance obligations, and costs. The aim is to provide businesses exporting covered goods to the EU with practical advice on navigating the new rules. The guide can be read as a step-by-step overview or used selectively by consulting specific sections on topics of interest.

Consult the European Commission's CBAM portal for official documents: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

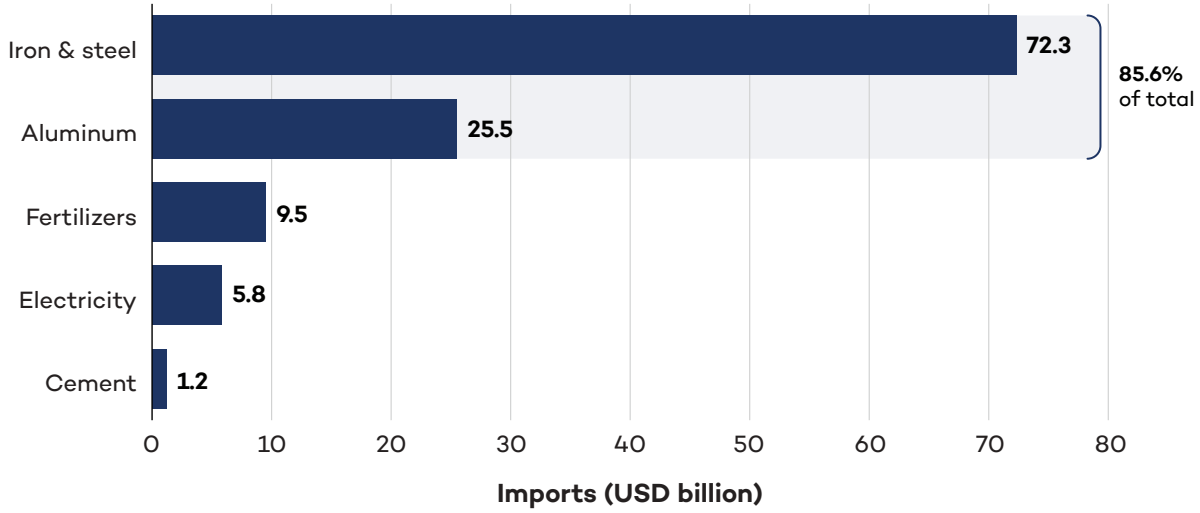
The Purpose of the EU CBAM

The explicit aim of the EU in implementing CBAM is to prevent "carbon leakage" (the risk that businesses move production to countries with weaker climate rules to avoid carbon costs) by ensuring that imported goods face a carbon price similar to that paid by EU producers.

What Does the EU CBAM Cover?

The EU CBAM covers a specific list of products from the **iron and steel, aluminum, cement, fertilizer, hydrogen, and electricity** sectors. The exact products are determined by customs CN codes (European product classification numbers) set out in the CBAM Regulations.

Figure 1. Total EU imports of CBAM goods (annual average 2022–2024)



Source: Authors' calculations based on Centre d'Études Prospectives et d'Informations Internationales (CEPII) (2025); Annex I to Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism.

N.B. the quantity of imported hydrogen is negligible.

As illustrated in Figure 1, iron and steel (USD 72.3 billion) and aluminum (USD 25.5 billion) together account for approximately 85.6% of the total value of EU imports of CBAM-covered goods (USD 114.3 billion, 2022–2024 annual average). The other sectors—fertilizers (USD 9.5 billion), electricity (USD 5.8 billion), and cement (USD 1.2 billion)—represent a smaller share of the total. For this reason, the remainder of this guidance is focused on these two sectors, which represent the primary exposure channels for exporters to the EU under the CBAM regime.

Introducing the Definitive Period

On January 1, 2026, the EU CBAM entered its definitive period, where importers will be liable for reporting and paying for the verified carbon emissions embedded in products entering the EU.[3] For exporters of CBAM goods to the EU, the definitive phase means increased data and verification to report actual emissions, potentially increased costs, as well as new opportunities to demonstrate low-carbon performance in the EU market. A comparison of the Transition and Definitive Periods is explained in Table 1.

Table 1. Comparison of changes between the EU CBAM transition and definitive periods

Issue	Transition period	Definitive period
Authorised CBAM Declarant	Authorization not required.	From March 31, 2026, importers must have submitted an application for Authorised CBAM Declarant status. Those with a registered application may continue importing provisionally until a decision is issued; those without face potential trade disruption.
Default values	Businesses were encouraged to transition from using default values to actual embedded emissions values.	Businesses can choose to use either the default values or the actual embedded emissions values. Country- and product-specific default values have been published.
Calculation of actual embedded emissions	The EU set out a methodology for the calculation of actual embedded emissions.	New requirement for actual embedded emissions calculations to be verified by an accredited verifier.
CBAM Declarations	Declarations were required on a quarterly basis.	Declarations will be made on an annual basis. For imports in 2026, the declaration will be due on September 30, 2027.
CBAM certificates	Not available for sale.	From January 1, 2026, imports of CBAM goods create liabilities. Authorised CBAM Declarants will be able to buy CBAM certificates from February 1, 2027.

[3] A full list of hyperlinks to relevant documents can be found in the references section of this report. The entry into force of the EU CBAM regulation is set out in Art. 36 – Entry into force under the Regulation Establishing a Carbon Border Adjustment Mechanism (2023/956 as amended by Regulation (EU) 2025/2083.

Issue	Transition period	Definitive period
Deducting carbon price paid in the origin country	CBAM Declarants were encouraged to submit supporting documentation re: prices paid.	The core Regulation provides for a reduction of the CBAM obligation where a carbon price has been effectively paid in the country of origin, subject to defined conditions.[4] Operational details and guidance are still being clarified by the European Commission. A draft methodology was published in May 2026 (see Box 1, Section 8); final rules expected later in 2026.
Threshold	CBAM applies only to importers bringing in more than 50 tonnes of CBAM goods per year.	No change.

Source: Authors' compilation based on Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism.

How to Use This Guide

Section 1 introduces the EU CBAM and situates this guide within the broader policy context, setting out its scope, audience, and intended use. Section 2 covers the broader EU trade landscape for steel and aluminum, providing the market and policy backdrop against which CBAM operates. Section 3 covers the regulatory transition from the transitional phase to the definitive period, highlighting the key changes businesses need to prepare for. Section 4 explains how CBAM costs are calculated, walking through the core formula, the role of CBAM certificates, and the Free Allocation Adjustment (FAA) together with the applicable benchmarks. Section 5 sets out how embedded emissions are determined—the key input to cost—covering the methodology, emissions scope, the use of actual values and default values, and illustrative worked examples for an integrated blast furnace and an EAF. Section 6 describes the reporting obligations that Authorised CBAM Declarants must meet, and Section 7 sets out the verification requirements and the role of accredited verifiers. Section 8 addresses carbon price deductions, explaining the methodology for claiming a deduction for carbon prices paid in the country of origin and the practical impact of such deductions on CBAM liability. Section 9 provides resources for businesses, including guidance from the European Commission and the list of EU member state National Competent Authorities (NCAs) responsible for administering CBAM. Section 10 is an operational checklist that consolidates the key steps businesses should take to prepare for and comply with the definitive period.

[4] Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a Carbon Border Adjustment Mechanism, Article 9 (deduction of carbon price paid in a third country), which defines "carbon price" as a monetary amount paid under a carbon tax or emissions trading system for greenhouse gas emissions embedded in goods and sets conditions for its recognition, including the requirement that the price has been effectively paid and not subject to rebate or other compensation.

2.0 The Broader EU Trade Landscape for Steel and Aluminum

Key takeaways

- CBAM is not the only EU policy exporters need to watch: steel and aluminum are also affected by broader trade and industrial policy shifts.
- For steel, proposed replacement safeguard measures in 2026 point to lower quotas, higher out-of-quota tariffs, and melt-and-pour origin rules.
- That means steel exporters may soon face both CBAM compliance and more stringent trade defence rules.
- For aluminum, the EU is moving toward stricter checks on imports, closer monitoring of materials linked to Russia, and possible limits on how scrap aluminum can be exported or used.
- The commercial message is clear: EU market access for these sectors is tightening on several fronts at once.

In addition to core CBAM compliance obligations, exporters of steel- and aluminum-related goods should monitor parallel EU trade policy developments that may affect market access and cost exposure.

Steel Measures

On October 7, 2025, the European Commission published a proposal for steel safeguard regulations to replace current safeguard measures, which expire in June 2026.[5] The new measures reduce the existing quota by 47% to 18.3 million tonnes annually and increase the ad valorem out-of-quota tariff from 25% to 50%. The original EU steel safeguard was introduced in 2018 in response to U.S. tariffs. WTO rules limit safeguard measures to 8 years; therefore, the EU was unable to extend the existing regime and intends to replace it with this new framework, which aims to reduce steel import market share to 2013 levels.

In addition to strict tariff measures, the new proposal also includes the introduction of a "melt-and-pour" rule that mandates that the origin of a steel product is determined by the location where the raw steel was first produced in liquid form, regardless of where subsequent rolling or finishing took place. In the current proposals, the requirement for importers to provide evidence on the country of melt and pour will apply from October 1, 2026.

The melt-and-pour rule will be used to determine eligibility for country-specific quotas under the new EU safeguard mechanism. Exporters of steel products to the EU will therefore have to prove origin using two different methodologies, one from a customs perspective (which will

[5] As set out in European Commission Proposal COM (2025)726 final. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52025PC0726

be used for the purposes of EU CBAM) and another for the new melt-and-pour rule under the proposed steel safeguard.

The proposal has reached political agreement on 13 April 2026 with final formal approval from EU member states and the European Parliament needing to take place ahead of the 1 July 2026. The outcome of negotiations with trade partners on specific quotas will be translated into implementing acts, adopted by the Commission.

Aluminum Measures

New trade restrictions are also emerging for aluminum in the EU, although through a different set of instruments than in steel. In its Steel and Metals Action Plan of March 19, 2025, the European Commission identified aluminum as a sector requiring urgent attention, noting that EU producers had lost substantial market share over the previous decade, that around 50% of EU primary aluminum capacity had remained curtailed since 2021, and that the risk of trade diversion had increased following new U.S. tariffs on aluminum. The Commission announced that it had begun gathering evidence for possible use of trade defence instruments—including a potential safeguard investigation—and stated its readiness to act immediately upon receiving a substantiated request from industry.

At the same time, the EU has tightened restrictions on Russian aluminum. Processed aluminum goods from Russia were already subject to import restrictions, and the EU's 16th sanctions package of February 24, 2025, added a ban on imports of Russian primary aluminum, with a quota mechanism intended to allow a smoother transition for businesses. This means that EU buyers of aluminum products may face growing pressure to diversify supply chains away from Russian-origin material and to document origin more carefully.

A second major development concerns aluminum scrap. The Commission has publicly stated that ensuring sufficient availability of aluminum scrap on the EU market is strategically important for decarbonization and that it intends to create a new instrument to stop the leakage of aluminum scrap from Europe. A targeted stakeholder consultation confirmed that this measure was being prepared following the REsourceEU Action Plan, with a proposal expected by Q2 2026. For exporters and producers, this signals that the EU increasingly views aluminum not only through the lens of carbon pricing, but also through industrial resilience, circularity, and security of supply.

Unlike steel, there is no aluminum safeguard regime currently in force. In its Steel and Metals Action Plan, the Commission stated that it had begun gathering evidence regarding the use of trade defence instruments for aluminum, and that it stands ready to open a safeguard investigation immediately upon receiving a duly substantiated request from industry. At the time of writing, no such investigation had been formally initiated. However, the overall policy direction is clearly toward closer scrutiny of import flows, greater willingness to use trade defence instruments, and stronger efforts to retain scrap and recycled material within the EU market. Exporters of aluminum products to the EU should therefore continue to monitor possible safeguard action, anti-dumping developments in upstream inputs, and new measures affecting scrap availability and sourcing strategies.

3.0 Transitioning to the EU CBAM Definitive Period

Key takeaways

- The transition to the definitive period (from 2026) removes much of the flexibility of the reporting-only phase and introduces new compliance obligations for importers.
- Import of CBAM-covered goods into the EU is restricted to Authorised CBAM Declarants. Importer authorization becomes a core commercial due diligence consideration, including clarity on the importer of record and responsibility for CBAM compliance.
- Compliance requires annual declarations and the surrender of CBAM certificates, creating direct financial liability linked to embedded emissions.
- The CBAM Registry is the central compliance infrastructure, supporting authorization, reporting, verification, and certificate management, and requires systems capable of generating, storing, and transmitting the relevant data.
- The non-EU installation operator module enables emissions data to be uploaded once and shared across multiple EU declarants, reducing duplication and administrative burden.

The transition from the reporting-only phase of EU CBAM (2023–2025) to the definitive phase (post-2026) involves several important changes to the requirements for the importer of record of CBAM products into the EU.[6] Much of the flexibility from the transitional period has been removed. This has implications for exporters as well.

The Status of the Authorised CBAM Declarant

Starting January 1, 2026, the capacity to import CBAM-covered goods into the EU is restricted exclusively to those importers that have been granted Authorised CBAM Declarants status. Exporters should not ship goods to EU buyers unless the buyer or their indirect customs representative has secured this specific authorization; otherwise, there is a risk of trade disruptions.[7]

[6] The procedures for the EU CBAM Transitional Phase were set out in Commission Implementing Regulation (EU) 2023/1773 and its related annexes.

[7] Details on Authorised CBAM Declarants are set out in Chapter II Obligations and Rights of Authorized CBAM Declarants under the Regulation Establishing a Carbon Border Adjustment Mechanism (2023/956) as amended by Regulation (EU) 2025/2083 and Implementing Regulation (EU) 2025/2549 Amending and Correcting as Regards the Conditions and Procedures Relating to the Status of Authorised CBAM Declarant.

The CBAM Registry and Data Confidentiality

The CBAM Registry is the sole repository for all compliance data. Unlike during the transitional period, when the registry was solely for the purpose of data collection, it is now used to manage and record financial liabilities through the issuance, surrender, and cancellation of CBAM certificates. It is also used to communicate verified emissions data.

Non-EU manufacturers should consider whether they want to take advantage of the non-EU installation operators module[8] of the CBAM Registry, which allows non-EU installations to upload and share their installation and emissions data across multiple reporting declarants, instead of submitting it separately to each declarant.

The Commission has set out rules on how data contained in the operators module of the CBAM Registry will be treated confidentially, including the processing of any personal data according to the EU's General Data Protection Regulation.[9]

[8] The module training can be found at European Commission (2026e).

[9] The Data Privacy Statement for the CBAM Registry can be found at European Commission (2026f).

4.0 Calculating CBAM Charges

Key takeaways

- The importer's CBAM liability depends on how many emissions are attributed to the imported good after the FAA is applied.
- That liability is then monetized through the price of CBAM certificates, subject to any eligible deduction for carbon price effectively paid in the country of origin.
- The most commercially important variable is often the product's specific embedded emissions because this is where lower-carbon producers can differentiate themselves.
- For exporters, the message is simple: better emissions data and lower emissions intensity usually translate into lower CBAM exposure for the EU buyer.

This section explains how CBAM costs are calculated. The emissions values that drive these costs—whether based on verified actual data or default values—are described in Section 5.

Not all embedded emissions are subject to CBAM charges in 2026. To align with the gradual phase-out of free allowances allocated to EU industries under the Emissions Trading System (ETS), the CBAM liability is phased in on a similar timeframe.

4.1 The Core Formula

To calculate the number of CBAM certificates that must be purchased for a given shipment, one must multiply the total quantity of embedded emissions (in tonnes of CO_2e), adjusted for free allocations in the EU, by the price of the EU ETS allowances while accounting for any carbon price already paid in the country of origin.[10]

In practice, one of the important drivers of cost is whether embedded emissions are calculated using verified actual data or default emissions-intensity values. Default values are conservatively estimated, and their use can significantly increase CBAM liabilities (see Section 5.2).

[10] This is expressed under Art. 6 of the Regulation Establishing a Carbon Border Adjustment Mechanism (2023/956) as amended by Regulation (EU) 2025/2083 and further elaborated through Commission Implementing Regulations (2025/2547) as regards the methods for the calculation of emissions embedded in goods; (2025/2548) as regards the calculation and publication of the price of CBAM certificates; and, (2025/2620) as regards the calculation of the free allocation adjustment to the number of CBAM certificates to be surrendered.

Equation 1.

Free Allocation Allowance

(Actual specific embedded emissions (tCO_2/t goods) − (CBAM benchmark (tCO_2/t goods) × CBAM factor (%) × Cross-sectoral correction factor) −

Liability deduction for carbon price paid

((Carbon price already paid on the specific emissions (EUR/tCO_2) × Actual specific embedded emissions (tCO_2/t goods)) ÷ Price of CBAM certificate (EUR/tCO_2))) × Amount of goods (t goods)

= number of CBAM certificates

The core formula shown in Equation 1 (derived from Regulation (EU) 2023/956 and its implementing acts) explains how to calculate the number of CBAM certificates (NCBAM) required for a given import. In general terms, the number of CBAM certificates required is equal to the number of tonnes of embedded emissions in the shipment, adjusted for the free allocations remaining in the EU and the carbon price paid in the country of origin. Once the quantity required has been calculated, CBAM certificates are then purchased by importers at a price roughly equal to the per tonne price for allowances under the ETS (Section 4.2 describes CBAM certificates in more detail). Each of the main terms in the formula above is defined as follows.

Specific Embedded Emissions

Specific Embedded Emissions (SEE) represent the emissions intensity of a CBAM good, measured in tonnes of CO_2 equivalent (CO_2e) per tonne of product. See Section 5 for additional information about how it is calculated.

FAA

The FAA represents the portion of embedded emissions that is not subject to a CBAM charge. It reflects the level of free allocation an equivalent EU installation would receive. The FAA is determined using the CBAM factor, CBAM benchmark, and cross-sectoral correction factor (CSCF) (see Section 4.3 for additional details on the FAA).

Liability Deduction for Carbon Price Paid

Under Article 9 of the CBAM Regulation, importers may reduce their CBAM liability by accounting for carbon prices effectively paid in the country of origin. This mechanism avoids double carbon pricing (see Section 8 for details).

4.2 CBAM Certificates

Key takeaways

- CBAM certificates are the financial instrument importers must buy from national authorities to cover embedded emissions in imported goods, and their price mirrors the EU ETS.
- In 2026, the certificate price is based on quarterly averages of EU ETS auction prices; from 2027 onward, it shifts to weekly averages, making exposure more responsive to market volatility.
- Importers must surrender the relevant CBAM certificates by September 30 each year, starting in 2027 for goods imported in 2026.
- CBAM certificates are not tradable on the secondary market, so forecasting imports and emissions becomes important for cash-flow management for importers.

The price of CBAM certificates is dynamically linked to the EU ETS to ensure equivalence and prevent internal market distortion. Commission Implementing Regulation (EU) 2025/2548 sets out the calculation rules as follows:

- **2026 (first year)**: For the calendar year 2026, the Commission will calculate the certificate price as a quarterly average of the auction clearing prices of EU ETS allowances. This provides some price stability during the first year of financial liability.
- **2027 onwards**: The calculation of the certificate price shifts to a weekly average of the EU ETS allowance price, tying the import cost closely to the volatility of the EU carbon market.

Prices will be published on the Commission's website and the CBAM Registry on the first working day of the following period. CBAM Declarants purchase these certificates from the competent authority of their member state. CBAM certificates are distinct from ETS allowances; they cannot be traded on the secondary market and have a limited validity period.

EU Carbon Pricing

The EU's price for carbon is determined by market supply and demand for EU Allowances (EUAs, one allowance equals 1 tonne of CO_2). This price has evolved significantly since its inception in 2005. In 2018, the EU introduced the Market Stability Reserve, which provided a mechanism to automatically adjust the supply of allowances based on the total number of allowances in circulation.[11]

[11] This was part of the 2018 EU ETS Revision as set out in Directive (EU) 2018/410 amending Directive (2003/87/EC) to enhance cost-effective emission reductions and low-carbon investments and Decision (EU) 2015/1814.

By late 2021 and throughout 2022, EUA prices increased to levels above EUR 50 per tonne, eventually approaching the EUR 100 mark. Prices then declined to approximately EUR 65 per tonne in 2024. Prices recovered through 2025, trading around EUR 70–80 per tonne by year end, and have remained in a similar range in early 2026, with the published European Commission CBAM certificate price for Q1 2026 at EUR 75.36 per tonne.

Moving forward, the EU's carbon price is likely to be influenced by several forces. Evolutions tending to increase the allowance price include the accelerating reduction of the free allowance supply and the scheduled tightening of the overall emissions cap. On the other hand, pressures that may result in a decline in the allowance price include political pressure to soften the ETS, including calls from several member states to delay the phase-out of free allowances for carbon-intensive sectors or to slow the pace of climate policy in response to high energy prices and competitiveness concerns. The outcome of these competing pressures will determine whether carbon prices follow the trajectory implied by current legislation or settle at a lower level. Forecasts of the EU's carbon price by 2034 range from EUR 150 to EUR 200 per tonne of carbon.[12]

4.3 The FAA and Benchmarks

Key takeaways

- The FAA reduces the share of embedded emissions that is subject to a CBAM charge during the phase-in period.
- It is based mainly on EU ETS-derived benchmarks and the CBAM factor.
- The CBAM factor evolves over time, which induces a mechanical increase in liabilities.
- Benchmarks differ by product and, for many steel and aluminum goods, by production route.

As defined in Section 4.1, the FAA represents the portion of embedded emissions that is not subject to a CBAM charge, specifically the level of free allocation an equivalent EU installation would receive. The FAA is determined using the CBAM factor, CBAM benchmark, and CSCF. The specific embedded free allocation (SEFA) represents the carbon allowance benchmark per unit of a specific good.

Determining the FAA

The FAA is intended to reflect the quantity of emissions that are covered by free allowances under the EU ETS. The FAA is subtracted from the CBAM liability that would otherwise accrue to provide approximately equivalent treatment to imported goods. It is determined based on CBAM benchmarks, which are derived from the same product benchmarks used

[12] For example, ABN AMRO (2025) refers to EUR 145/tCO_2 by 2030 and EUR 200/tCO_2 by 2035.

in the EU ETS for the 2026–2030 period.[13] The adjustment for a specific good is calculated as follows:

Equation 2.

$$FAA_g = SEFA_{(g,y)} \times M_g$$

The FAA for a specific CBAM good *g* is determined by multiplying the SEFA, which represents the carbon allowance benchmark per unit of a specific good, by the total mass (M_g) of that good imported during the reporting year (y). The SEFA used in the FAA calculation can differ depending on whether embedded emissions are based on verified actual data or default values.[14]

One should distinguish between simple and complex goods:

- **simple good:** A good that does not incorporate any precursor materials that are themselves listed in Annex I of the CBAM Regulation. Example: A primary aluminum ingot produced directly from raw bauxite/alumina.
- **complex good**: a good that is produced using at least one "relevant precursor," meaning it incorporates other CBAM-listed goods during its manufacturing.

For a simple good, the SEFA represents the amount of embedded emissions per tonne of product that is exempted from CBAM liability to ensure imports are treated equitably with EU products that still receive free allowances under the EU ETS. This value is determined by multiplying the CBAM factor ($CBAM_y$), representing the percentage of free allocation still in effect, by the CSCF ($CSCF_y$) and the product-specific emissions benchmark (BM_g^*). The CBAM factor, benchmarks, and the CSCF are described in more detail in Eq. 3.

Equation 3.

$$SEFA_{g,y} = SFA_{Proc_{g,y}} = CBAM_y \times CSCF_y \times BM_g^*$$

For a complex good, the SEFA is calculated by combining the free allocation attributable to the final production process with the weighted sum of free allocations already embedded in its precursors. This ensures that the total deduction reflects the entire carbon intensity of the supply chain of the product.

Equation 4.

$$SEFA_{g,y} = SFA_{Proc_{g,y}} + \sum_{i=1,\ldots,n} m_{i,y} \times SEFA_{i,y_i'}$$

[13] Details on Authorised CBAM Declarants are set out in Chapter IV CBAM Certificates under the Regulation Establishing a Carbon Border Adjustment Mechanism (2023/956) as amended by Regulation (2025/2083).

[14] This is set out in Commission Implementing Regulation (EU) 2025/2620 as Regards the Calculation of the Free Allocation Adjustment to the Number of CBAM Certificates to Be Surrendered. Particular attention should be paid to the Annex, which contains the calculations set out in this section as well as the CBAM benchmark values.

The components of this calculation include

- process-level specific free allocation ($SFA_{Proc_{g,y}}$): This represents the deduction for the final stage of production of the CBAM good and is calculated by multiplying the CBAM factor for the reporting year by the CSCF and the process-related benchmark for that specific good.
- mass of precursors ($m_{i,y}$): This is the quantity of each precursor (i) consumed to produce 1 tonne of the final good (g). It is determined by dividing the total mass of the precursor used by the activity level (total production) of the installation during the reporting period.
- embedded free allocation of precursors ($SEFA_{g,y}$): This is the per-unit free allocation value for each precursor (i) during its reporting period (y). If a precursor is itself a complex good, its SEFA must be determined through the same process until all relevant precursors have been accounted for.

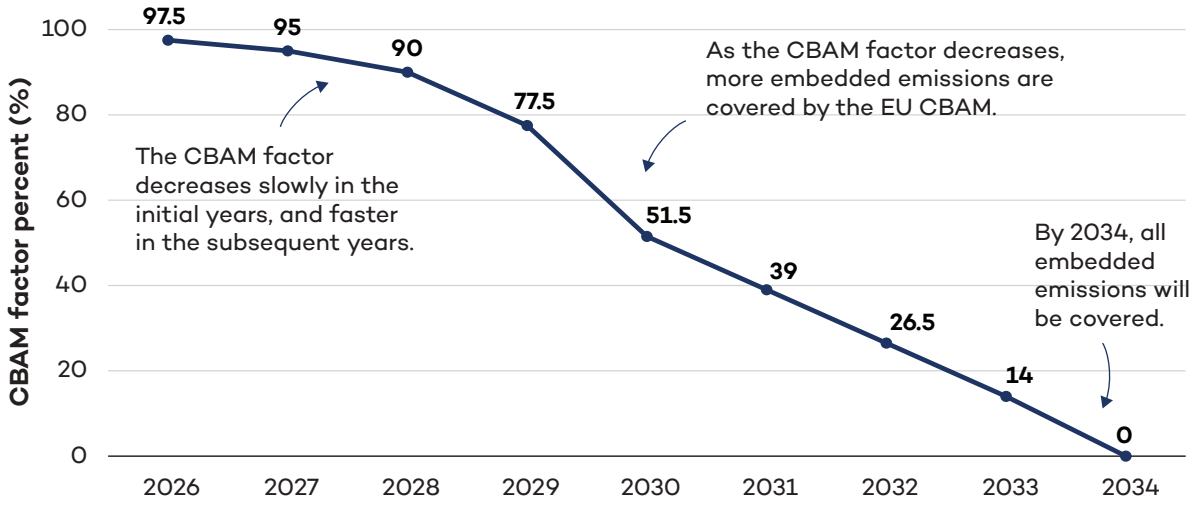
If the actual verified data for precursors is unavailable, the CBAM Declarants must utilize default values. In such cases, the SEFA for the complex good is simplified to a single multiplication of the CBAM factor, the CSCF, and the default CBAM benchmark assigned to the CBAM product's CN code and production route. This matters because the determination of the relevant CBAM benchmark depends on the identification of the applicable production route, product characteristics, and other parameters aligned with EU ETS benchmarks. Where verified actual data is available, these elements can be determined more precisely at the installation level. By contrast, where default values are used, the benchmark application may rely on more standardized assumptions, including predefined production routes. As a result, while the benchmark system itself remains unchanged, the level of granularity in its application, and therefore the resulting SEFA, may differ between the two approaches.

The CBAM Factor

The CBAM factor ($CBAM_y$ from the equation above) is the reduction factor applied to free allocation under the EU ETS and to the FAA as CBAM is phased in.[15] As shown in Figure 2, for the year 2026, the CBAM factor is 97.5%, meaning that importers receive an FAA covering 97.5% of the benchmark emissions intensity. This factor will decrease annually, reaching 51.5% in 2030 and 0% by 2034, at which point the FAA will no longer be applied and all embedded emissions will be subject to a CBAM charge.

[15] A full explanation of the differences between simple and complex goods is set out in Section 4.2 of this report.

Figure 2. The CBAM factor



Source: Authors' figure, based on Article 10a(1a), Directive 2003/87/EC (as inserted by Article 1(13) of Directive (EU) 2023/959); see also Article 31(1) of Regulation (EU) 2023/956.

Benchmark Figures

These benchmarks (BM_g^* from Eq. 3) are derived from the EU ETS and are calculated based on the average greenhouse gas performance of the top 10% lowest greenhouse gas intensity installations within the EU for a given product. Between 2026 and 2033, these figures act as a "free allowance" equivalent; importers pay only for the emissions that exceed this benchmark, adjusted by the CBAM factor.[16]

The benchmark figures can be found in the Annex of Implementing Regulation 2025/2620. For each CN code, the Implementing Regulation specifies additional considerations depending on the production route of the particular product.

The CSCF

The CSCF is a reduction applied to free allowances in the EU. Under the EU ETS, there is a cap on the total number of free allowances available to industry. If the total free allocation calculated for all EU installations—based on product benchmarks and installed capacity—from all EU factories for these free allowances exceeds the legal cap, the Commission applies the CSCF to reduce everyone's allocation by the same percentage to stay under the limit. The CSCF is not a fixed published value; it is triggered only if the total calculated free allocation across all EU installations exceeds the available allowance cap. The CSCF was not triggered during the 2021–2025 period. For the 2026–2030 period, the Commission has designed a 3%

[16] The CBAM factor values are set in Article 10a(1a) of Directive 2003/87/EC, as inserted by Article 1(13) of Directive (EU) 2023/959. The schedule runs from 97.5% in 2026 down to 0% from 2034. The obligation to apply the resulting free allocation adjustment to CBAM certificates is set out in Article 31(1) of Regulation (EU) 2023/956.

buffer intended to avoid triggering the correction factor, meaning CSCF may remain at 1.0 (no reduction).

Example: Using CN code 7210 for a Vietnamese exporter

Vietnam represents a good example for steel products: about 20% of its steel exports went to the EU (2022–2024).[17] The following example illustrates how CBAM liabilities are calculated for a Vietnamese exporter shipping 1,000 tonnes of flat-rolled steel products (CN 7210: flat-rolled products of iron or non-alloy steel, of a width ≥ 600 mm, clad, plated or coated) to the EU. It assumes that installation-specific actual emissions data is unavailable, so the importer relies on default emissions-intensity values.

Baseline Parameters

- **Good**: CN 7210
- **Quantity (Q)**: 1,000 tonnes
- **Origin**: Vietnam
- **Default emissions-intensity**, Vietnam value for 2026 = 2.607 tCO_2e
- **CBAM benchmark**: 1.491 tCO_2e/t (assuming: blast furnace-basic oxygen furnace (BF-BOF), the dominant integrated steel route).
- **CBAM factor (2026)**: 97.5% (0.975)
- **Quarterly average certificate price (pCBAM)**: EUR 75.36 (Q1 2026 quarterly average, published April 7, 2026).
- **Carbon Price Paid Abroad**: EUR 0 (None for Vietnam as of March 2026)
- **CSCF**: 1.0 (assumed)

Step-by-step calculation

Calculate the FAA

SEFA = 1.491 x 0.975 x 1 = 1.454 tCO_2e/t

FAA = 1.454 x 1,000 tonnes = 1,454 tCO_2e

Calculate Net Emissions Subject to CBAM and Resulting Number of Certificates

Net emissions subject to CBAM = Default emissions - FAA = 2,607 – 1,454 = 1,153 tCO_2e → 1,153 CBAM certificates required (1 certificate per tCO_2e)

Calculate Financial Liability for Total Shipment

Total cost for 1,000 tonnes = 1,153 x EUR 75.36 = EUR 86,890

In this scenario, the CBAM cost per tonne of imported product is approximately **EUR 87**.

[17] Source: Authors' calculations based on BACI (2025); Annex I to Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism.

Steel producers should be attentive to a specific, counterintuitive situation in the case of default values applied to BF-BOF and EAF-DRI (EAF fed with direct reduced iron) steel. Default values can result in higher CBAM charges for lower-emission EAF-DRI routes than for higher-emission BF-BOF routes. This reflects the fact that default values are not differentiated by production route, while less emissions-intensive routes can carry a correspondingly lower benchmark. As a result, producers using lower-carbon routes have a strong incentive to report verified actual emissions, as reliance on defaults may negate their emissions advantage, or even act as a stronger penalty.

Table 2. Comparative cost implications of CBAM certificates for 1 tonne of CN 7210 from Vietnam

Metric	Example 1 (Default, BF/BOF)	Example 2 (Default, DRI/EAF)	Example 3 (Actual, Scrap/EAF)
Emissions intensity			
SEE (tCO_2e/t)	2.607	2.607	0.62
SEFA (tCO_2e/t)[a]	1.454	0.553	0.109
Emissions subject to CBAM[b] (tCO_2e/t)	1.153	2.054	0.511
CBAM cost			
CBAM cost per tonne (Q1, 2026, in EUR)	87	155	39
Cost per tonne in 2034, assuming carbon price of EUR 150/t (low end of EUR 150– 200/t 2034 forecast range, in EUR)[c]	391	391	93
Tariff equivalents			
CBAM ad valorem equivalent (Q1, 2026)	~12%	~22%	~5%
Safeguard duty (out-of-quota)[d]	25%	25%	25%

Notes:

Hight Medium Low

[a] Standard European free allocation.

[b] SEE minus SEFA.

[c] Illustrative projection only.

[d] EU steel safeguard out-of-quota duty rate.

Source: Authors' calculations based on Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism; Implementing Regulation (EU) 2025/2620; Implementing Regulation (EU) 2025/2621; carbon price projections from industry forecasters (see Footnote 12); EU steel safeguard out-of-quota duty rate under Commission Implementing Regulation (EU) 2019/159 and extended under Implementing Regulation (EU) 2024/1782.

For an exporter using default emissions values, the CBAM charge alone can be significant. In Q1 2026, a Vietnamese exporter of flat-rolled steel (CN 7210) faced a CBAM cost of approximately EUR 87–155 per tonne of product, depending on the production route—equivalent to a 12%–22% ad valorem tariff. For comparison, the EU's current steel safeguard imposes a 25% out-of-quota duty once the relevant tariff-rate quota is exhausted; where that duty applies, it would be charged in addition to CBAM.

By 2034, this rises to roughly EUR 400–500 per tonne, reflecting the combined effect of free allocation phasing out (the CBAM factor reaching 0%) and the projected rise in EU carbon prices into the EUR 150–200/t range cited above.

Instead, by using actual values, some of the least-emitting production routes could result in CBAM costs of only ~EUR 40/tonne in Q1 2026 and ~EUR 90/tonne in 2034.

5.0 Determining Embedded Emissions

Key takeaways

- Embedded emissions are the core quantity on which CBAM is built, so this section is central to cost exposure.
- The EU methodology follows its own monitoring and attribution rules and cannot be treated as interchangeable with other reporting standards.
- The calculation requires installation-level monitoring, attribution to production processes, and then attribution to goods.
- Steel and aluminum exporters often face additional complexity because many products are treated as complex goods, which requires obtaining data on the emissions intensity of inputs.

This section sets out how embedded emissions are determined. These emissions values feed directly into the cost calculation in Section 4.

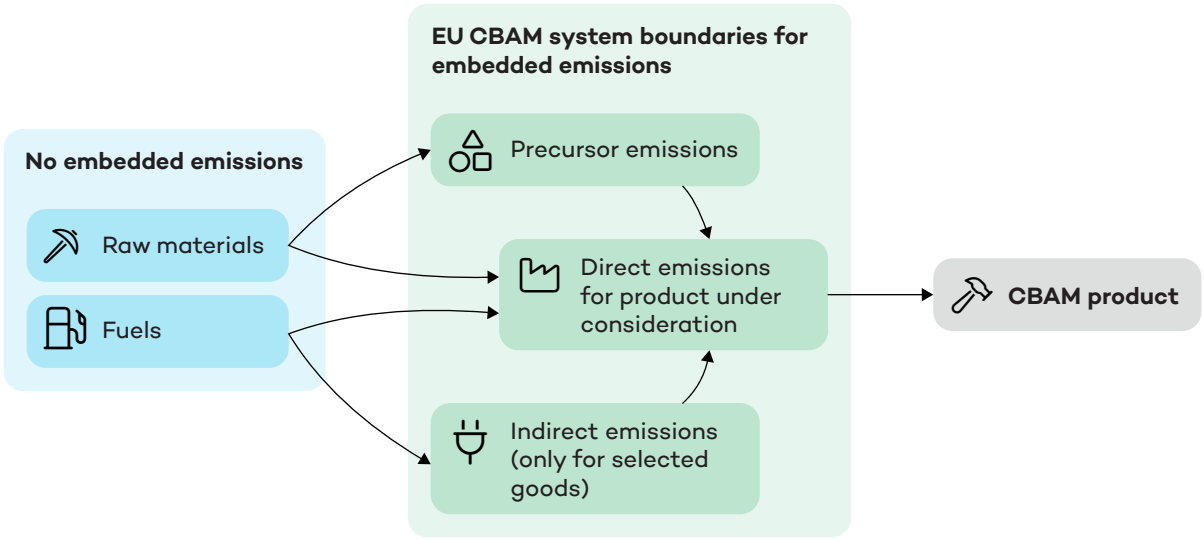
The core of the CBAM obligation is the quantification of "embedded emissions," or the amount of greenhouse gas emissions that have been attributed to the production of covered goods under CBAM.[18] Over time, a higher proportion of embedded emissions will be subject to CBAM charges. Producers with lower emissions intensity will therefore have an increasingly important advantage over higher-emission competitors.

The Commission has set out specific rules for the calculation of embedded emissions, defining system boundaries, data aggregation, and attribution methods. As discussed above, it has also produced a set of default emissions-intensity values for use in cases where verified actual emissions data is not available. Default values are described in greater detail later in this section.

The calculation of actual embedded emissions according to the prescribed CBAM methodology differs from many other international emissions calculation standards, which may be used by businesses in exporting countries already. While certain data may be reusable for the purposes of CBAM, it should not be assumed that the numbers can be used in a like-for-like situation.

[18] The Annex of Commission Implementing Regulation (EU) 2025/2620 as Regards the Calculation of the Free Allocation Adjustment to the Number of CBAM Certificates to Be Surrendered sets out the CBAM benchmark values in Section 5, which includes both the rules for selecting the appropriate CBAM benchmark value and the benchmark values themselves.

Figure 3. Steps to determine embedded emissions under EU CBAM



Source: Authors' illustration based on Regulation (EU) 2023/956 establishing a Carbon Border Adjustment Mechanism and Implementing Regulation (EU) 2025/2547.

5.1. Methodology for Determining Embedded Emissions

5.1.1. Emissions Scope

Key takeaways

- CBAM does not treat direct and indirect emissions the same way across all sectors.
- In 2026, direct emissions matter for all core sectors covered here, but indirect emissions are only taken into account for cement and fertilizers.
- The future inclusion of indirect emissions for steel and aluminum remains possible and should be monitored.

Direct and indirect emissions are treated differently across CBAM sectors. "Direct emissions" refer to those released from the production process itself (e.g., combustion of coal in a blast furnace). "Indirect emissions" refer to the emissions associated with the generation of electricity that is purchased and consumed during production.

Table 3. Financial liability for direct and indirect emissions in 2026[19]

Sector	Direct emissions liability	Indirect emissions liability
Iron & steel	Yes	No
Aluminum	Yes	No
Cement	Yes	Yes
Fertilizers	Yes	Yes
Hydrogen	Yes	No

Source: Authors, based on Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism.

Strategic Implications of Possible Scope 2 Inclusion for Steel and Aluminum

The exclusion of indirect emissions for iron, steel, and aluminum under EU CBAM currently lowers the CBAM cost faced by exporters in countries with carbon-intensive electricity grids. In countries with a high reliance on coal power, if indirect emissions were priced, electric arc furnace (EAF) steel and primary aluminum (both electricity-intensive processes) would face higher CBAM costs, potentially rendering them uncompetitive in the EU market. Conversely, for those goods where indirect emissions are not priced, producers in countries with low-carbon grids will not see the benefit of relatively lower CBAM charges on their products.

However, the exclusion of indirect emissions for iron, steel, and aluminum is under active review. In April 2026, the European Parliament rapporteur for CBAM reform proposed that coverage be progressively extended to indirect emissions across additional sectors as part of the next CBAM revision (Chahim, 2026). Businesses in exporting countries could anticipate this possible future inclusion and accelerate investments in renewable energy procurement (e.g., direct power purchase agreements) to lower their indirect emission footprint before the exemption expires. Conversely, exports of cement and fertilizer face immediate full exposure.

5.1.2 Using Actual Emissions

Key takeaways

To report actual emissions, businesses will need to:

- Define installation boundaries and production processes in line with the EU CBAM methodology. Emissions must be attributed at the level of the specific production process, not the facility as a whole.
- Set up monitoring systems that can allocate emissions to production processes and final goods, using either calculation-based or measurement-based approaches.

[19] The distinction between pre-consumer and post-consumer scrap is set out in Implementing Regulation 2025/2547 as Regards the Methods for the Calculation of Emissions Embedded in Goods.

- Ensure all emissions data can be traced back to source documents, as actual values will require third-party verification.
- Distinguish clearly between simple and complex goods: complex goods require combining emissions from the production process with those embedded in CBAM precursors.
- Map all relevant precursors in their production process and understand how their embedded emissions feed into the final product.
- Obtain verified emissions data from upstream suppliers wherever possible; missing data will trigger the use of default values.
- Establish robust data-sharing arrangements across the supply chain early, as precursor data gaps can significantly increase CBAM costs.

The embedded emissions calculation is not based on the facility as a whole but on the specific production processes yielding the CBAM goods. Operators in exporting countries must define the "installation" boundaries to encompass all technical units where production of CBAM goods occurs.

As explained in Section 4, the distinction between simple and complex goods determines whether embedded emissions are based only on the final production process or must also include relevant precursors.

This means that the total embedded emissions for a complex good are the sum of the direct emissions from the final production process plus the embedded emissions already contained within the precursors used, for example, steel wire (a CBAM good) produced from steel billets (another CBAM good). The emissions calculations for the wire must account for the carbon footprint of the billets.

Table 4. Comparison of simple versus complex CBAM goods

	Simple goods	**Complex goods**
Input materials	No CBAM precursors used	Includes one or more CBAM precursors
Emissions source	Emissions from the specific production process	Emissions from the specific production process + embedded emissions of the precursors
Data requirement	Installation-level data only	Supply chain data for all relevant CBAM precursors

Source: Authors' compilation based on Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism (Annex IV) and Implementing Regulation (EU) 2025/2547.

The SEE is the most variable component of the calculation for actual embedded emissions and can be determined through two distinct methodologies: the "mass balance method" (tracks all carbon inputs and outputs across the production process to derive emissions by

difference) and the "calculation-based methodology" (uses activity data [fuel consumption, process rates] multiplied by emission factors). The choice between these methods is governed by the availability and quality of primary data from the producer. The methodology for actual emissions requires monitoring at the installation level, the attribution of those emissions to specific production processes, and finally to the goods themselves.

For a simple good, the formula for attributed emissions is defined in Annex IV of Regulation (EU) 2023/956 and further refined in Implementing Regulation 2025/2547, as shown in Eq. 5 below. The *g* in this context refers to the CBAM good identified by its CN code.

Equation 5.

$$SEE_g = \frac{AttrEm_g}{AL_g}$$

- $AttrEm_g$ = the attributed direct or indirect emissions of the specific production process yielding the goods during the reporting period.
- AL_g = the activity level representing the quantity of goods produced during the same period.

Quantifying Production Emissions

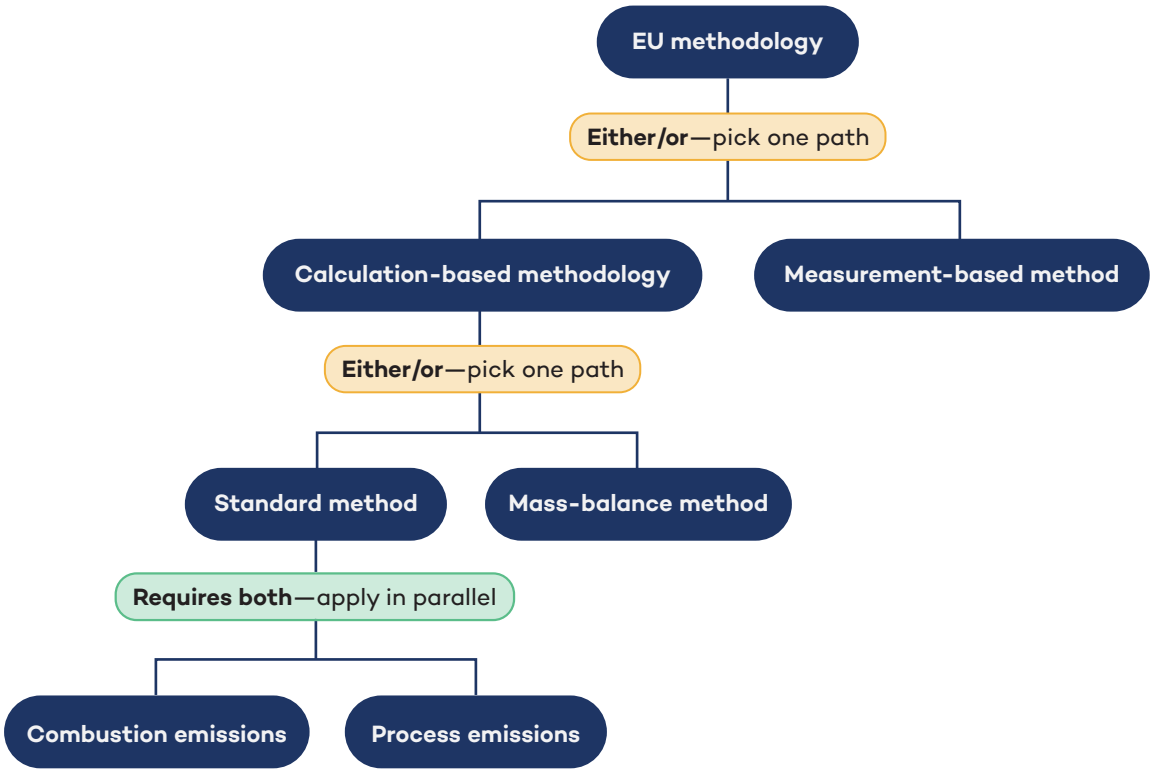
The methodology for calculating actual embedded emissions under the CBAM is designed to mirror the monitoring and reporting standards of the EU ETS. To calculate actual emissions, the business which operates the production facility (the "installation operator") must first define the system boundaries of the production process and identify all relevant production routes and precursors (input materials that are themselves CBAM goods).

The methodology for calculating actual embedded emissions sets out how installation operators must define system boundaries and production routes for covered goods. The calculation allows for two possibilities when gathering data on actual embedded emissions:

- a "calculation-based methodology" (using activity data and emission factors) or
- a "measurement-based method" (using continuous emissions monitoring systems). These emissions are then attributed to specific goods using a mass balance or energy-flow method.

Figure 4 presents the various methodological options.

Figure 4. Methodology for calculating actual embedded emissions



Source: Authors' design based on Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism.

Emissions must be monitored at each location (or "installation"), broken down by specific production processes for each product. For example, if an installation produces multiple goods (e.g., a steel mill producing both billets and finished wire rods), emissions must be allocated based on the inputs and energy consumed by each process.[20] It is possible that installation operators can use a combination of the two approaches (calculation-based or measurement-based) for different parts of a production site.

The regulation mandates that where the same kind of good (defined by the same CN code) is produced using different routes within one installation (e.g., both blast furnace and EAF routes under one roof), these are treated as a single production process. The embedded emissions attributed to the goods become the weighted average of all routes used. This provision is designed to prevent "resource shuffling," where a producer might attempt, in the case of steel production, to attribute all EAF production to the exported goods while using blast furnaces for domestic production.

The vast majority of CBAM goods exported under the steel and aluminum categories are classified as "complex goods." Their embedded emissions calculation is more complex: it is the sum of the emissions from the production process itself plus the embedded emissions

[20] The definitions for simple versus complex goods are set out in Annex IV, Methods for calculating embedded emissions for the purpose of Article 7 in the Regulation Establishing a Carbon Border Adjustment Mechanism (2023/956) as amended by Regulation (2025/2083).

of the input materials (precursors). This changes the earlier calculation by modifying it, as shown in Eq. 6.

Equation 6.

$$SEE_g = \frac{AttrEm_g + EmbEm_{precursors}}{AL_g}$$

- $EMBEM_{precursors}$ = The emissions already embedded in raw materials that are themselves covered by CBAM.

In the case of iron & steel and aluminum, the relevant precursors are:

- **iron and steel**: Iron ore agglomerates, ferro-alloys (ferro-manganese, ferro-chrome, ferro-nickel), and pig iron.
- **aluminum**: Alumina (aluminum oxide), unwrought aluminum, and baked anodes.
- **scrap**: For both iron & steel and aluminum, pre-consumer scrap should be considered a precursor. Post-consumer scrap is currently considered to have an emissions intensity of zero, and so it is not included in the calculation.[21]

For example, a steel roller producing cold-rolled coil must obtain verified emissions data from its supplier of hot-rolled coil. If the supplier is in the same country, they must provide verified data. If the supplier is in a third country (e.g., China or India), the data must travel with the product. If actual verified data for a precursor is unavailable, the CBAM Declarant would be forced to use default values. As discussed below, these default values are high, and the use of defaults may therefore prove to be a competitive disadvantage. Supply chain transparency will become increasingly commercially valuable.

Non-EU manufacturers will want to consider implementing data exchange protocols with their upstream suppliers to ensure that "actual" data is available for the final calculation.

Where verified actual emissions data is unavailable for an installation or precursor, the EU CBAM requires the use of default values, as set out in the following section. As discussed, default values are standardized emission intensity values provided by the European Commission as an alternative to verified actual data. They are designed to approximate embedded emissions using a consistent methodology across countries and products. They come with drawbacks, as discussed below.

[21] This principle is set out in Paragraphs 5 and 6 of the Commission Implementing Regulation (EU) 2025/2547 as regards the methods for the calculation of emissions embedded in goods.

5.1.3 Using Default Values

Key takeaways

- Default values are a methodological fallback when verified actual emissions data is unavailable, not a neutral placeholder.
- They include annual markups that increase CBAM costs over time: +10% (2026), +20% (2027), +30% (2028 onward).
- Providing verified actual emissions data is typically the single most effective way to reduce CBAM liability.

In the absence of verified actual emissions data, the CBAM Regulation mandates the use of default values. Commission Implementing Regulation (EU) 2025/2621 establishes these default values, which are high and designed to incentivize the use of actual embedded emissions data whenever possible.

There are two possible default values that businesses will be able to use where actual embedded emissions are not available.

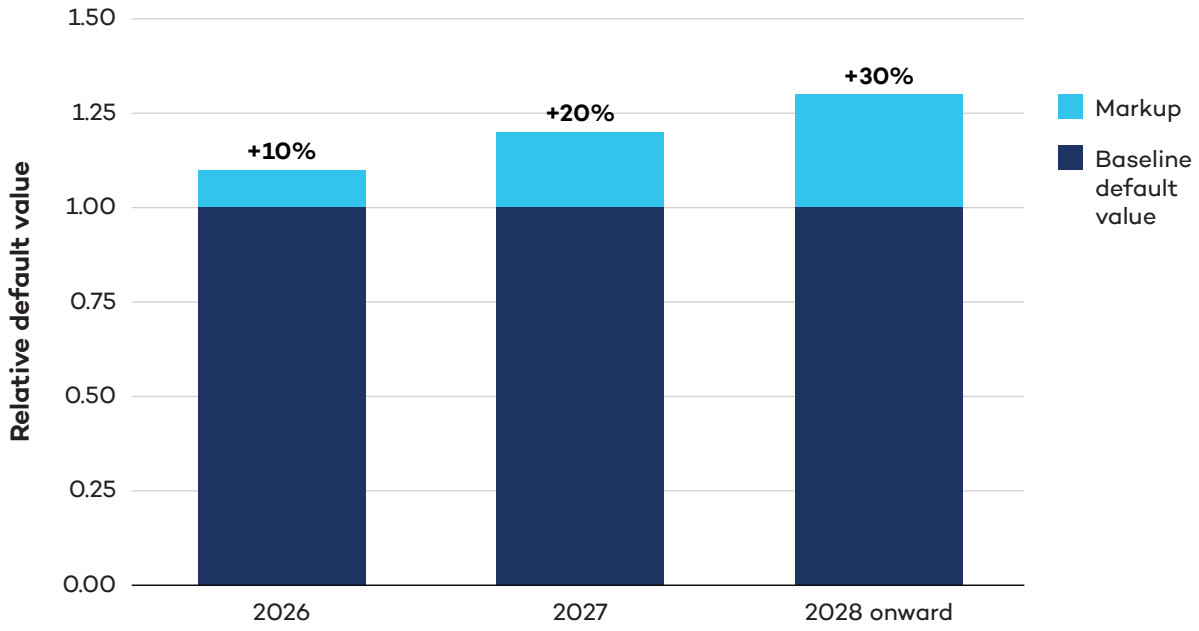
1. The first is where the CBAM goods and precursors have a verified country of origin, in which case country-specific default values can be used.
2. The second is where the origin of the goods cannot be verified, in which case general default values must be used.

The general default values (i.e., not country-specific) are calculated based on the average emission intensity of the 10 worst-performing exporting countries for that specific good type and are considerably higher than country-specific default values. This ensures that the default is likely higher than the actual emissions of most producers.

Furthermore, a markup is applied to both general and country-specific default values. The markup increases with time: see Figure 5.

Using flat-rolled steel products (CN 7210) as an example, Vietnam's country-specific 2026 default value (including the 10% markup) is 2.607 tCO_2e per tonne, while the "other country" default value is 4.511 tCO_2e. On average, for this origin country and product, default emissions intensity more than doubles if the producer or importer is unable to prove country of origin for the purposes of CBAM reporting. This penalty will increase year on year if default values continue to be used.

Figure 5. Default value markups across time



Source: Authors' design based on Implementing Regulation (EU) 2025/2621.

In the following table, a comparison of default values for key exporting countries is provided.

Table 5. Comparison of CBAM default values for flat-rolled products of iron or non-alloy steel, of a width ≥ 600 mm, clad, plated or coated (CN 7210) for select countries

Country	Direct emissions	2026	2027	2028 onward
Indonesia	8.25	9.075	9.9	10.725
India	4.28	4.708	5.136	5.564
Other country (unknown origin)	4.101	4.511	4.921	5.331
China	3.205	3.526	3.846	4.167
Türkiye	2.51	2.761	3.012	3.263
Vietnam	2.37	2.607	2.844	3.081
Japan	2.13	2.343	2.556	2.769

Source: Authors' design based on Implementing Regulation (EU) 2025/2621.

5.2 Illustrative Examples

Key takeaways

- The examples show how the production route matters enormously for emissions calculations.
- For complex goods, precursor emissions can account for a large share of the final product's total embedded emissions.
- These examples are illustrative, but they show why exporters need route-specific data rather than generic assumptions.

5.2.1 Example 1: Actual embedded emissions calculation for an integrated blast furnace

This example profiles an integrated steel installation producing semi-finished steel billets (CN 7207) via the BF-BOF route.

Step 1: Definition of system boundaries and production processes

The first step is to define the system boundaries for its "Pig Iron" and "Crude Steel" production processes. The boundary for the blast furnace route includes raw material preparation (sintering), fuel handling (coke making if on-site), the blast furnace itself, and auxiliary operations such as flue gas cleaning.

- **sintering plant**: Fine ore, flux (limestone), and coke breeze are processed. This stage produces "Sintered Ore" (CN 2601 12 00).
- **blast furnace**: Sintered ore is reduced using metallurgical coke and pulverized coal injection to produce liquid pig iron.
- **BOF**: Liquid pig iron is refined into crude steel by injecting oxygen to lower the carbon content.
- **casting**: The crude steel is cast into semi-finished billets.

Step 2: Collection of activity data and calculation factors

The mass balance method for blast furnace monitoring is presented below, with specific examples of carbon-bearing inputs and outputs explained in Table 6. Note that operators may also use the calculation-based methodology.

Table 6. Examples of emissions significance for blast furnace production

Input/output materials	Emission significance
Metallurgical coke	Primary reductant and fuel
Pulverized coal	Supplementary fuel injection
Sintered ore	Iron source (including residual carbon)
Limestone flux	Process material releasing CO_2
Liquid pig iron (output)	Output and potential precursor
Blast furnace slag	Waste material

Source: Authors' compilation based on Implementing Regulation (EU) 2025/2547.

Why the Mass Balance Method Is Appropriate for This Installation

In a blast furnace, carbonaceous inputs (principally metallurgical coke and pulverized coal injection) serve simultaneously as thermal energy sources and chemical reductants. The standard method assumes full oxidation of all fuel inputs to CO_2; in a blast furnace, this assumption does not hold, and without additional correction steps, it leads to systematic over-reporting.

Mass balance avoids this through three methodological advantages. First, it deducts carbon retained in the pig iron output (liquid pig iron typically contains 4%–4.5% carbon by mass), automatically recording it as an output stream rather than an emission. Second, it records carbon in blast furnace gas (BFG) once, at the furnace boundary, rather than requiring operators to track and report it at every downstream combustion point, therefore reducing both administrative burden and double-counting risk; where BFG is exported to another installation, that exported carbon must be accounted for separately by the receiving operator. Third, it captures CO_2 released by process inputs such as limestone flux (which releases CO_2 via calcination, not combustion) as part of the total input stream, without requiring separate monitoring of each non-combustion source. Operators should note that a complete mass balance must also account for other carbon-bearing output streams (blast furnace dust, sludge, and any unburnt char) to avoid misreporting.

Operational Requirements

Mass balance is demanding in practice. Weighing accuracy is critical: small calibration errors in measuring incoming coke or coal propagate directly into the emissions figure. High-frequency laboratory analysis of process gas composition is also required. Operators should confirm specific frequency requirements with their accredited verifier. Robust metering infrastructure and quality-control protocols should be in place before the first verification audit.

Step 3: Calculation of total attributed direct emissions

The total direct emissions for the pig iron production process are calculated using the mass balance of carbon. Under this method, any carbon that enters the process but is not contained in the final product or solid waste is assumed to have been released as CO_2.

Step 4: Corrections for waste gas and heat flows

Integrated mills often export BFG to other parts of the installation or to an external power plant. If this is the case, the installation would need to apply a correction factor. According to the implementing rules, emissions from exported waste gases are deducted from the production process's attributed emissions and attributed to the consumer of the gas. This deduction only applies if the verifier can confirm the gas was consumed in a manner that offsets other fuels.

Step 5: SEE for pig iron

The SEE is the total attributed emissions (tCO_2e) divided by the total activity level (AL_g), that is, the total tonnes of pig iron produced, yielding a result in tonnes of CO_2 per tonne of pig iron.

Step 6: Calculation for complex goods

The crude steel process (BOF) uses the pig iron as a precursor. If the installation uses its own pig iron, the emissions are carried forward. If it purchases additional pig iron from a supplier with a verified SEE, the calculation for the final steel billets (CN 7207) must include this. This multi-stage tracking is the most complex aspect of the BF-BOF route, requiring a "carbon passbook" for every internal transfer.

5.2.2 Example 2: Actual embedded emissions calculation for an EAF

Step 1: System boundaries and production routes

The EAF route uses electricity to melt ferrous scrap. The system boundary includes scrap storage and preparation, the furnace, secondary metallurgy (ladle refining) and the rolling mill. Key inputs for EAF:

- ferrous scrap (if it is pre-consumer scrap, it will need to be considered as a precursor).
- direct reduced iron as a high-purity precursor used for chemical balancing.
- electricity: The primary energy source for melting.
- graphite electrodes consumed during the arc process.

Step 2: Monitoring direct emissions

For direct emission sources, the calculation-based methodology uses activity data and emission factors. See Table 7 for relevant source streams.

Table 7. Emissions factor per ton of product

Source stream	Emissions factor (per tonne of product)
Graphite electrodes	3.00 tCO_2/t
Natural gas	2.02 tCO_2/t
Anthracite coal	2.85 tCO_2/t
Lime/dolomite	0.44 tCO_2/t

Source: European Commission, 2026g.

Step 3: Precursor emissions

If the producer uses direct reduced iron, the installation will need to either use the actual verified emissions of the precursor or use default values.

Step 4: Final calculation of the SEE

The calculation for the SEE is below.

Equation 7.

$$SEE_{Total}\ tCO_2/t = \frac{SEE_{Direct}}{AL}$$

A detailed comparison of both examples is provided in Appendix A.

Emissions From Electricity Consumption

The EAF process is highly electricity intensive, consuming approximately 550 kWh per tonne of crude steel (a typical industry figure, not country-specific). The EU has published country-specific electricity grid emission factors (in tCO_2/MWh) for use in calculating indirect emissions (Annex II of IR 2025/2621).[22] While these emissions are not currently included in the calculation of emissions intensity for steel products under CBAM, they may be included in the future should the EU decide to expand CBAM coverage to include Scope 2 emissions for the iron and steel sectors.

[22] This is set out in Annex II in the Regulation Establishing a Carbon Border Adjustment Mechanism (2023/956) as amended by Regulation (EU) 2025/2083.

6.0 Reporting

Key takeaway

- For CBAM reporting purposes, it will be necessary to capture key information on goods produced, fuels and materials used, electricity, precursors, and direct emissions.

The requirements an operator must include in a CBAM emissions report fall into five broad blocks: (1) identification and monitoring plan, (2) energy, gases, and transfers, (3) core emissions data, (4) granular emissions accounting, and (5) route- and sector-specific detail, as explained in Table 8.

Table 8. Key elements of an operator's emissions report

Category	What must be reported
Identification and monitoring plan	• Operator name, address, installation. CBAM and non-CBAM processes • Main goods (CN code), fuels, materials • Flags for continuous measurement, zero-rated fuels, and measurable heat flows
Energy, gases, and transfers	• Electricity sources (quantity, supplier, country) • On-site generation) • Waste gases produced or used • CO_2 transfers via carbon capture and storage or carbon capture, utilization, and storage
Core emissions data	• Total direct emissions and monitoring period • Goods produced per process (incl. non-CBAM where relevant) • For Annex I, not Annex II goods—total electricity consumed and source installations
Granular emissions accounting	• Specific direct embedded emissions per good and composition, with data quality, methods, and monitoring-vs-default share • Installation totals (activity data, sources, capture, data gaps) • Mass/energy balance of heat, waste gases, electricity per process
Route- and sector-specific detail	• Precursors by type, process, CN code, country of origin (with rules for complex goods and prior periods) • Electricity detail (actual values or PPA) • Goods per production route per CN code • Sector-specific add-ons

Source: Authors' compilation based on Implementing Regulation (EU) 2025/2547.

7.0 Verification

Key takeaways

- Exporters should consider a pre-verification exercise before the first full declaration cycle, especially for 2026 data.
- A physical site visit will be required in the first year of verification. In subsequent years, physical visits may be waived under certain conditions but must still occur at least once every 2 years.
- Businesses should keep systems audit-ready throughout the year because failed verification means the importer may have to revert to default values.
- A 5% materiality threshold applies; however, verifiers may still deem smaller issues material based on their nature.

In the definitive period, all actual emissions data reported in the annual CBAM declaration will need to be verified by an accredited third-party verifier. Self-declaration of emissions data will no longer suffice.[23]

Verifiers must be accredited by a National Accreditation Body (NAB) of an EU member state. There is currently no mutual recognition agreement that would allow non-EU accreditation bodies to accredit verifiers for CBAM, though it is possible for EU accreditation bodies to accredit non-EU verifiers.

Accredited verifiers must be registered in the CBAM Registry. Businesses wishing to rely on verified actual embedded emissions should therefore ensure that their chosen verifier is accredited and registered in the CBAM Registry.

Recent public statements by the German Emissions Trading Authority (Deutsche Emissionshandelsstelle, 2026) have indicated that businesses will be able to verify their emissions for 2026 from January 1, 2027, until the deadline to submit the first CBAM Declaration of September 30, 2027.[24]

In order to prepare for the verification process, installation operators in exporting countries may want to undertake a "pre-verification" process with a credible emissions verifier to prepare the necessary reporting data and data infrastructure.

[23] This is set out in more detail in Annex IV of the Implementing Regulation (2025/2547) as regards the methods for the calculation of emissions embedded in goods.

[24] The rules regarding verification are set out in Commission Implementing Regulation (2025/2546) on the application of the principles of verification of declared embedded emissions and Commission Delegated Regulation (2025/2551) by specifying the conditions for granting accreditation to verifiers, for the control and oversight of accredited verifiers, for the withdrawal of accreditation and for mutual recognition and peer evaluation of accreditation bodies.

The Verification Process

Verification of embedded emissions is conducted annually, in most cases.

The verifier must carry out a physical site visit to the installation in the first year it undergoes verification. A physical visit may be replaced by a virtual visit only in limited circumstances, typically where a physical visit was conducted in the previous year, and the installation has not undergone significant changes. A full waiver of the visit is subject to stricter conditions.[25] The verifier's decision to replace or waive a site visit does not require approval from competent authorities. Physical site visits will occur at least every 2 years.

The verification process includes

- **strategic analysis**: Assessing the risk of misstatements in the operator's data.
- **process analysis**: Verifying the boundaries of the installation and the production processes.
- **data verification**: Cross-checking activity data (fuel invoices, meter readings) against reported emissions.
- **report issuance**: The verifier issues a Verification Report, which must be uploaded to the CBAM Registry.

The verifier must apply a "risk-based approach" to their assessments. This means that they will analyze whether the reported data has any significant misstatements or errors. The error rate cannot be higher than 5% of the total SEE and 5% of the total specific free allocation for each tonne of the relevant good, identified by its CN code. However, a verifier retains the right to use expert judgment to consider misstatements or non-conformities that are below these 5% thresholds, or those concerning parameters not covered by the 5% rule, to be material based on their size and nature.

If the verifier cannot confirm the data's accuracy with reasonable assurance, the importer cannot use the actual emissions data and must use the default values. This highlights the importance for operators in exporting countries to maintain "audit-ready" data systems year-round.

Operational Considerations When Choosing an Accredited Verifier

Non-EU verification bodies will not be able to independently verify CBAM reports unless they successfully undergo the accreditation process with an EU NAB (e.g., DAkkS [Deutsche Akkreditierungsstelle] in Germany, COFRAC [Comité français d'accréditation] in France). Verification by local subsidiaries of global testing, inspection, and certification firms that already hold the necessary EU accreditations (e.g., SGS, TÜV Rheinland, Bureau Veritas, DNV) will likely be quickly approved under the new CBAM verification rules.

[25] The public statements are made available by Argus Media (Wlk & Senerdem, 2026).

8.0 Liability Deduction for Carbon Price Paid

Key takeaways

- The payment of carbon pricing in the country or countries of origin of the exported goods can reduce CBAM liability, though the binding methodology for calculating this reduction is not yet in force (as of mid-2026); the Commission published a draft in May 2026 (see Box 1).
- Where these carbon pricing systems include free allocation or other types of compensation, the deductible amount will be lower than the nominal carbon price.
- Exporters should clearly document how the carbon price relates to the embedded emissions of their exported goods.
- The Commission released a draft methodology in May 2026 (see Box 1) but has yet to publish a schedule of default carbon prices paid in foreign jurisdictions. These defaults may serve as an alternative to installation-level evidence.

To prevent double carbon costs, the EU CBAM allows importers to deduct carbon prices already paid in the country or countries of origin.

Under Article 9 of Regulation (EU) 2023/956, as replaced by Article 9 of Regulation (EU) 2025/2083, an Authorised Declarant may claim a reduction in the number of CBAM certificates to be surrendered based on carbon prices paid in the country or countries of origin of the good. This deduction applies only to explicit carbon pricing instruments, as defined in Article 3(29), namely a monetary amount paid under a greenhouse gas emissions reduction scheme (e.g., a carbon tax or ETS), calculated on emissions embedded in the production of goods.

8.1 Methodology

While the deduction has been possible in principle since 2026, the binding methodology for calculating it is not yet in force. In May 2026, the Commission published a draft Implementing Regulation under Article 9(5) (see Box 1) that sets out the technical rules for how to calculate the "effective carbon price" abroad, including how to treat free allowances, rebates, and exemptions, together with the evidence, verification, and documentation standards that will apply. Because the draft is not yet legally in force and its details may still change, the description that follows reflects the framework as currently proposed. Exporters should continue to monitor regulatory developments over the course of 2026.

The deduction is intended to be strictly limited to amounts "effectively paid." In practice, this requires that any form of compensation be deducted from the claimed carbon price, for example,

- free allocation of emission allowances under an ETS;

- carbon price rebates, refunds, or carbon tax exemptions;
- sectoral emissions-intensity standards below which no carbon price is due in output-based pricing regimes; and
- other mechanisms that reduce the effective carbon cost borne by the producer.

Using Price Records vs. Default Carbon Prices

For declarants using actual emissions-intensity values, a deduction may be based either on records of carbon prices paid or, where the European Commission has published a default carbon price for the relevant country, on that default value. Declarants using default emissions-intensity values, on the other hand, must use default carbon prices if they wish to claim a deduction.

For those choosing to use records of prices paid, the burden of proof lies with the declarant. The following documentary package is required under current law: evidence that the declared embedded emissions were subject to an effectively paid carbon price; evidence of any rebate, exemption or other compensation available under the third country's rules, with references to the relevant legislation; evidence of actual payment; and certification by a person independent from both the declarant and the authorities of the third country, with that person's name and contact details appearing on the documentation. The May 2026 draft Implementing Regulation under Article 9(5) (see Box 1) sets out the qualifications and independence conditions for that certifying person: the certifier must be accredited to the EN ISO/IEC 17029:2019 standard and may be the same body that verifies the operator's emissions, and the carbon-price report must be filed in English on a standard template via the CBAM Registry. These rules are not yet in force.

The regulation also provides for a fallback route based on yearly default carbon prices paid. Article 9(4) provides that yearly default carbon prices will be defined for those countries with carbon pricing in place. This route will be available where the Commission will have published a default carbon price for the relevant third country. While the EC has not yet defined these country-specific default values, the regulation states that the EC may publish them starting in 2027 and that a methodology for calculating them will also be published.

In line with the general principle of "effectively paid," any rebate of the carbon price or other form of carbon-price-related compensation available in the third country would also be taken into account in the determination of default carbon prices.

Finally, Article 2(12) raises the possibility that the EU will conclude government-to-government agreements with trading partners specifying the results of applying that definition in each case. This would spare the declarants from having to declare and verify a carbon price paid. It is unclear how these negotiations relate to the setting of default carbon prices under Article 9 (4).

Box 1. A draft is now on the table: How the EU plans to credit carbon prices paid abroad (May 2026)

Until now, the rules for deducting a carbon price paid in the origin country have existed only in principle—the detailed "how" was missing. In May 2026 the European Commission circulated a **draft Implementing Regulation** (European Commission, 2026g) that fills this gap. It is still only a draft: not yet legally in force and the details may change. But it is the clearest signal so far of how the system will work, and once finalized it is meant to apply **retroactively to January 1, 2026**. The main points for operators are below.

Only operators reporting actual emissions are eligible to report actual prices paid, all others must use default values for carbon prices paid domestically. To claim a deduction based on the actual price paid by the firm (backed by independent certification), embedded emissions must be reported using actual values. Operators relying on default emissions can still obtain a deduction using a standard "default carbon price" that the Commission will publish for the relevant country. This default carbon price is meant to reflect the average carbon price, after subtracting deductions in the country of origin. This default carbon price is also available to those producers who report actual emissions values if they choose to use it instead of actual prices paid.

Only the price effectively paid, net of any rebates or free allowances, counts toward a reduction on CBAM. Free allowances, exemptions, reduced rates, refunds, and compensation for carbon costs passed through electricity bills all have to be subtracted from the carbon price paid in the country of origin of the imported good. The one exception is funding that a domestic carbon pricing scheme returns to an industrial installation to help offset the cost of the operator's own decarbonization projects—this not subtracted, provided four conditions are met: every installation is eligible regardless of what it paid, the support must be something operators actively apply for, not an automatic payout, the granting decision is public, and its stated objective is to cut the installation's emissions.

Carbon offsets—domestic vs. international. Many mandatory carbon pricing schemes permit operators to meet part of their obligation by buying carbon **offsets**. The draft EU regulation would recognize the cost of these offsets as a carbon price paid, but draws a sharp line based on where the **emission-cutting** happens:

- **Offsets for emissions mitigation inside the operator's own country**, issued under that country's standards, are accepted as a carbon price paid—with no extra hoops to jump through.
- **Offsets for mitigation outside the country (international offsets) are subject to additional restrictions**. These purchases only count as a carbon price paid if they are **Paris Agreement Article 6 units** (authorized and issued under Article 6.2 or 6.4 as "internationally transferred mitigation outcomes"), and they can cover at most 10% of the emissions the scheme regulates.
- **Just like other forms of carbon price, the offset is worth its price per unit of emissions**. The deduction is based on the price an operator actually paid for an offset. If an offset covering one tonne was purchased for EUR 5, the claim is EUR 5/tonne. The total quantity of emissions is not reduced by purchased offsets.

Who verifies. The person certifying an operator's carbon-price claim must be formally accredited (to the EN ISO/IEC 17029:2019 standard) and can be the same body that verifies the operator's emissions. The carbon-price report itself must be written in English on a standard template and submitted via the CBAM Registry.

How the price paid is matched to traded goods. The draft sets out a single method for attributing a facility-level carbon payment across its products. The total carbon price paid over the reporting year is divided by the emissions reported and confirmed under the carbon price mechanism to give an average price per tonne of CO_2e. Those covered emissions are then attributed to individual goods using the same system boundaries and production-process rules already used to calculate embedded emissions, so each product is assigned its own emissions per tonne of output.

8.2 Impact

Domestic carbon pricing affects CBAM liabilities in two ways:

- directly, through deductions under Article 9; and
- indirectly, by incentivizing emissions reductions in production.

However, the direct impact will often be limited. Where domestic systems include significant free allocation or other compensation mechanisms, the "effectively paid" carbon price—and therefore the deductible amount—will almost certainly be substantially lower than the nominal carbon price.

As long as domestic carbon prices remain well below EU levels—and/or are substantially offset by compensation mechanisms—CBAM liabilities will only be partially reduced. Nevertheless, accurate measurement and robust documentation of carbon price payments will be important for cost mitigation.

9.0 Resources Available to Businesses

Key takeaways

- This guide should be used in combination with the European Commission's CBAM guidance and tools, which provide important additional details.
- Updates to requirements are expected from relevant NCAs as well as from the Commission.
- Specialized software or consulting support may be needed for emissions accounting, supplier data collection, or reporting workflows.

The European Commission is the primary architect and interpreter of CBAM rules. Its resources should be the main source for any compliance strategy. The Commission has published extensive guidance documents for both importers and non-EU installation operators. These documents provide the specific mathematical formulas for calculating embedded emissions for every covered sector.

The EU CBAM homepage provides access to the full legal framework (regulations, implementing acts, delegated acts), operational guidance for the definitive period (including on authorization, reporting, and verification), the CBAM Registry portal, sector-specific webinars, a directory of NCAs in EU member states, certificate pricing publications, and technical support materials for developing countries.

The European Commission developed a CBAM Self-Assessment Tool, an Excel-based utility that allows procurement teams to input CN codes, countries of origin, and trade values to instantly determine if a transaction falls within the CBAM scope. The EU's official guidance has been complemented by additional supporting documents, including the following:

- *CBAM Compliance Essentials for Importers and Indirect Customs Representatives as From 1 January 2026* (European Commission, 2026a):
  - provides a quick-reference overview of compliance requirements for the definitive period
  - covers authorization steps, the March 31, 2026, application deadline, quantity thresholds, enforcement procedures, and NCA contact points
- The CBAM Sectors page (European Commission, 2026b):
  - provides detailed sector-specific information, including for non-EU producers
  - includes sector-specific webinars
- *Questions and Answers on the Carbon Border Adjustment Mechanism (CBAM), European Commission (2025)*:
  - covers the December 2025 legislative package

    - includes proposed extension to ~180 downstream steel and aluminum products
    - summarizes anti-circumvention provisions and the temporary decarbonization fund
    - provides an overview of implementing acts for the definitive period
- Excel spreadsheets of CBAM Default Values and Benchmarks (European Commission, 2026c):
    - provides key parameters in an accessible format
    - reflects values set out in Implementing Regulations (EU) 2025/2621 and 2025/2620
- the CBAM Registry and Reporting page (European Commission, 2026d):
    - explains how to use the CBAM Registry for authorization and reporting
    - provides guidance on emissions data access and sharing
    - includes user manuals and technical guidance for compliance

NCAs

EU member state NCAs are responsible for the administration of EU CBAM (a full list can be found here).

10.0 CBAM Checklist for Businesses

The following checklist translates the priority action areas identified in this guidance into step-by-step operational requirements for compliance during the definitive period.

Exporters of CBAM-covered goods to the EU should complete the following actions across three phases:

Phase 1: Preparation and gap analysis (2026)

- confirm Authorised Declarant status:
    - exporting to the EU: Engage with your EU importer of record to confirm they have obtained—or applied for—Authorised CBAM Declarant status. From March 31, 2026, importers must have submitted an application; those with a registered application may continue importing provisionally until a decision is issued, while those without an application face the risk of trade disruption.
- actual emissions calculations: Conduct a gap analysis of current emissions monitoring against the boundaries set out in the EU implementing regulations.
- pre-verification: Contract an EU-accredited verifier for a "pre-verification" audit of 2025 data to identify any data gaps or improvements in emissions data gathering before the full verification exercise is undertaken.
- upgrade data and information technology infrastructure: Confirm that internal systems can produce auditable data trails and generate emissions reports in the formats required by EU verifiers.

Phase 2: Operational implementation (2026–2027)

- **data sharing with supply chain**: Establish strict data-sharing protocols with upstream suppliers of precursors (e.g., billets, clinker, alumina) to ensure receipt of verified actual data.
- **cost mitigation**: Assess and implement measures to reduce embedded emissions in CBAM-covered products, prioritizing production process improvements where commercially viable.
- **account for carbon price paid**: If participating in a domestic ETS or subject to a carbon tax, maintain precise records of all carbon payments to support carbon price paid deduction claims.
- **submit verified CBAM declaration**: Ensure that actual embedded emissions for 2026 imports are verified by an EU-accredited third-party verifier and reported in the CBAM Registry by the statutory deadline of September 30, 2027. This is the central compliance obligation of the definitive period.

Phase 3: Strategic decarbonization and regulatory developments tracking (2027 onward)

- **invest in low-carbon technologies**: Utilize verified emissions data to build a business case for capital investment in low-carbon technologies and production processes.
- **monitor ongoing developments**: Track regulatory developments, including potential expansion to downstream products, inclusion of indirect emissions for iron, steel and aluminum, and changes to free allocation schedules under the EU ETS that will increase the overall cost trajectory over time.

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EU CBAM Legislation

Consolidated Regulation 2023/956 Establishing a Carbon Border Adjustment Mechanism amended by 2025/2083 (CBAM Simplification).

Implementing Regulations and Delegated Regulations

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Implementing Regulation as Regards the Establishment of Default Values (2025/2621). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32025R2621&qid=17#67657480953

Assessment of the Functioning of the EU CBAM

Report from the Commission on the application of the Regulation on the Carbon Border Adjustment Mechanism (COM/2025/783). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52025DC0783

Future CBAM Developments

Downstream Product Extension and Anti-Circumvention

Accompanying Document on the Proposal for a Regulation as Regards the Extension of Its Scope to Downstream Goods and Anti-Circumvention (SWD/2025/987). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025SC0987&qid=1767657480953

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Appendix A. Comparison of Emissions Measurement Steps Under Examples 1 and 2 of Section 5.2

Table A1. Worked examples of actual embedded emissions for 1 tonne of CN 7207 steel from Vietnam: blast furnace-basic oxygen furnace (BF-BOF) versus electric arc furnace (EAF) routes

	Example 1: BF-BOF	**Example 2: EAF**
Precursor assumptions	Using Vietnam default values (IR 2025/2621): • Sintered ore (HS 2601 12): 1.040 t CO_2/t • Pig iron (HS 7201): 2.190 t CO_2/t	EAF route primarily uses steel scrap (zero embedded emissions under Carbon Border Adjustment Mechanism [CBAM]). • Post-consumer steel scrap (HS 7204): 0 t CO_2/t (Pre-consumer scrap must be treated as a precursor with actual or default emissions, per IR 2025/2547.) • Pig iron (HS 7201, 5% additive): 2.190 t CO_2/t
Crude steel production (intermediate)	• Direct process emissions: ~0.220 t CO_2/t • Pig iron consumption: 0.95 t per 1 t crude steel **Specific Embedded Emissions (SEE)_crude = 0.220 + (0.95 × 2.190) = 2.3005 t CO_2/t**	• Direct EAF process emissions (electrodes/additives): ~0.080 t CO_2/t • Scrap consumption: 1.05 t (1.05 × 0 = 0) • Pig iron addition: 0.05 t (0.05 × 2.190 = 0.1095) **SEE_crude = 0.080 + 0 + 0.1095 = 0.1895 t CO_2/t**
Final product (CN 7207)	• Direct rolling/finishing emissions: ~0.050 t CO_2/t • Crude steel consumption: 1.05 t per 1 t final product **Total embedded emissions = 0.050 + (1.05 × 2.3005) = 2.4655 t CO_2/t**	• Direct rolling/finishing emissions: ~0.050 t CO_2/t • Crude steel consumption: 1.05 t per 1 t final product **Total embedded emissions = 0.050 + (1.05 × 0.1895) = 0.2490 t CO_2/t**
Result	Actual direct embedded emissions for 1 t of BF-BOF steel (HS 7207): **2.466 t CO_2**	Actual direct embedded emissions for 1 t of EAF steel (HS 7207): **0.249 t CO_2**

Source: Illustrative calculations based on EU CBAM Implementing Regulations (IR) 2025/2621 (Vietnam default values) and 2025/2547 (scrap treatment). Direct process emission factors are indicative only.

Published by the International Institute for Sustainable Development

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