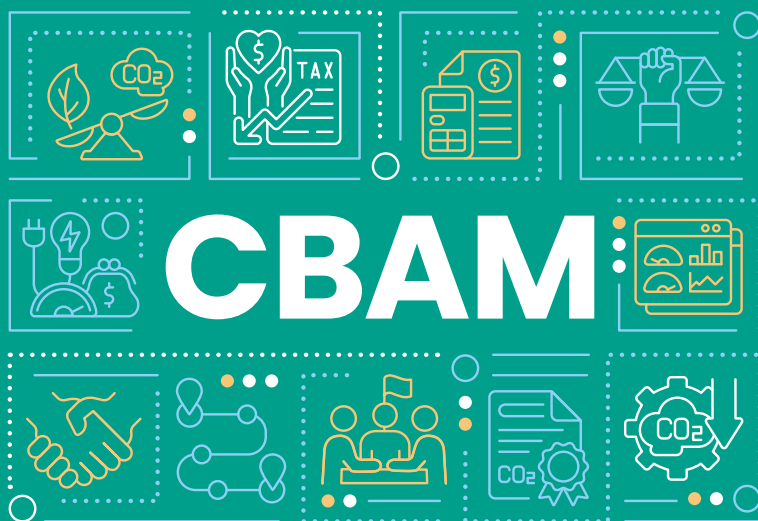


# Calculating



# Costs: Emission Compensations Explained

## Introduction

As the Carbon Border Adjustment Mechanism (CBAM) enters its final phase of development, one of the most pressing questions for importers is how to correctly calculate the cost of compliance. From January 2026, compensating for embedded emissions will no longer be a theoretical exercise: it will become a financial obligation. Though the full operational framework of CBAM continues to evolve, the underlying mechanics of how the system intends to monetize emissions embedded in imported goods are now sufficiently clear to allow for structured preparations. This article focuses on the practical side of calculating CBAM-related costs, explaining the core components of the calculation and highlighting the implications of the delayed availability of CBAM certificates.

## Understanding What Must Be Compensated

The compensation requirement under CBAM is directly tied to the greenhouse gases emitted during the production of imported goods. These are referred to as embedded emissions and include both direct process emissions and those associated with the use of carbon-intensive precursors. Only emissions linked to the production of goods falling within the scope of CBAM (such as steel, cement, aluminum, fertilizers, electricity, and hydrogen) are covered.

It is essential to understand that CBAM does not account for all types of emissions. Currently, indirect emissions - those from electricity consumption, are excluded from the calculation, although discussions are ongoing about their potential future inclusion. For the time being, the focus remains on direct process emissions and precursor emissions, both of which must be quantified and reported accurately.

## The Benchmark Value and Its Role

At the core of CBAM's compensation system lies the concept of the Benchmark Value. This benchmark represents the average emissions intensity of the best 10% of EU Producers for each covered product. It acts as a reference point to ensure fair treatment between EU producers and foreign exporters. The European Commission publishes these values based on verified ETS (EU Emissions Trading System) data (last release 2021-2025).

As of today, the official CBAM Benchmark Values have not yet been published by the European Commission. This lack of clarity complicates cost projections for 2026, making it difficult for importers to build precise financial models. It adds a new layer to the growing uncertainty surrounding the mechanism's implementation.

The Benchmark Value is not just a statistical figure; it is a financial trigger. If the embedded emissions in imported goods exceed this benchmark, the importer must compensate for the difference. The logic is simple: foreign producers with higher emissions than their "greener" EU counterparts must pay the gap, preserving the integrity of the EU's decarbonization efforts and ensuring no competitive advantage is given to carbon-intensive goods from abroad.

## The Allowance Factor: A Transitional Adjustment

To ease the transition, the CBAM legislation introduces a gradually decreasing adjustment factor known as the "CBAM allowance factor." This multiplier accounts for the fact that, during the early stages of CBAM's implementation, EU producers will still receive a portion of their ETS allowances for free.

For 2026, the allowance factor is set at 0.975, meaning that only 97.5% of the benchmark value is deductible when calculating compensable emissions. This percentage will decline annually, with an expected value of about 0.5 in 2030, and about 0 in 2034. The factor introduces a time-based dimension into the compensation formula, moderating the financial impact on importers during the early years.

## Discounting Local Carbon Pricing Schemes

In principle, CBAM allows importers to deduct from their financial obligation the portion of emissions already compensated in the country of origin through a carbon pricing scheme. This feature aims to acknowledge and respect the sovereignty of non-EU countries that have implemented domestic ETS-like systems.



However, as of today, no foreign ETS has been officially approved by the European Commission for this purpose. This regulatory vacuum means that all emissions must be treated as uncompensated, and therefore fully subject to CBAM.

While the option to deduct foreign carbon costs theoretically exists, the lack of recognition from the EU makes it practically irrelevant for current cost calculations. This has immediate consequences for financial planning, as importers must budget as if 100% of the compensable emissions will be subject to CBAM costs.

## ETS Price: The Monetary Reference

The cost of compensation is directly linked to the price of EU ETS allowances. **CBAM certificates will be priced according to the weekly average price of ETS allowances on the EU carbon market. According to the current regulation, the applicable price is determined as the average ETS price of the week preceding the submission of the CBAM declaration.**

This pricing mechanism is designed to ensure parity between EU internal production and imports. However, it introduces volatility into the CBAM system, as ETS prices fluctuate based on market dynamics, regulatory changes, and macroeconomic trends. Importers must therefore monitor ETS trends closely to anticipate potential cost changes.

Adding to the uncertainty is the absence of any long-term ETS price guarantee and the reliance on a weekly average that may vary significantly from month to month. This makes forward planning difficult, especially for companies that need to lock in prices over longer contractual periods.

## The CBAM Compensation Formula

With the core parameters defined, the standard formula to estimate CBAM costs is:

$$(D - f \times B) \times \text{EUA} = C$$

Where:

**D** = Declared Emissions (tCO<sub>2</sub>/t product)

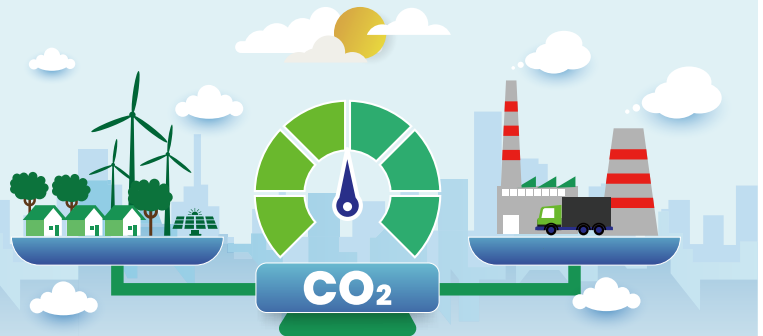
**f** = Allowance Factor (e.g., 0.975 for 2026)

**B** = Benchmark Value (tCO<sub>2</sub>/t product)

**EUA** = ETS Price (€/tCO<sub>2</sub>)

**C** = CBAM Cost (€/t product)

This formula assumes no deduction for foreign carbon pricing schemes, which reflects the current regulatory reality. It provides a straightforward method to estimate the financial impact of CBAM per ton of imported material.



Consider the following example:

An importer declares 2.10 tCO<sub>2</sub>/t of steel, while the Benchmark Value is 1.80 tCO<sub>2</sub>/t. The ETS price is €75/t. The allowance factor for 2026 is 0.975.

$(2.10 - 0.975 \times 1.80) \times 75 = (2.10 - 1.755) \times 75 = 0.345 \times 75 = \text{€}25.88$  per ton of steel.

This amount represents the cost per ton that the importer must pay in CBAM certificates. Given the large volumes typically associated with materials like steel or cement, the financial implications are significant.

## Compensation Obligations vs. Certificate Availability

One of the major contradictions in the current CBAM rollout is the timeline mismatch between the obligation to compensate and the availability of the certificates. **The regulation clearly states that the compensation becomes mandatory starting in January 2026. However, EU informed recently that importers are not expected to be authorized to purchase CBAM certificates until 2027.**

This delay has serious implications. Legally, importers are accruing liabilities from the start of 2026, but the instruments to discharge these liabilities will only become available a year later. While this gap is presumably transitional, it generates a period of high uncertainty that requires strategic response.

## The Hedging Dilemma

Facing a future financial obligation based on fluctuating prices, many importers are already exploring financial hedging instruments. The objective is to lock in a carbon price today and secure protection against future price increases. **Instruments like EUA forwards and futures are currently the most accessible tools for this purpose.**

However, hedging CBAM liabilities poses a unique risk: the product to be hedged – the CBAM certificate – does not yet exist. **While EUA-based financial instruments can offer partial protection, they are not identical to CBAM certificates and may not be directly transferable.** This structural ambiguity makes current hedging strategies inherently speculative.

Moreover, **without official guidelines on whether future CBAM certificates can be offset by pre-purchased EUAs**, there is no legal guarantee that such hedges will be recognized. This opens up a broader conversation about the prudence of engaging in financial contracts on instruments that are yet to be created.

Nevertheless, many companies consider the risk of inaction greater. With ETS prices having shown extreme volatility in the past, ranging from €30 to over €100 within just two years, large importers are unwilling to leave their future CBAM obligations exposed. This is especially true for sectors like steel or aluminum, where the emissions per ton are high, and where price margins are already under pressure.

## Looking Forward: Strategic Implications for Importers

The uncertainty surrounding CBAM certificate availability, the unpublished Benchmark Values, and the fluctuating ETS reference price (calculated as the weekly average prior to declaration submission) all create a highly unstable foundation for financial planning. Companies are asked to comply with a mechanism whose core economic variables remain undefined or subject to change.

Importers must integrate CBAM costs into their pricing models for 2026 onwards, even in the absence of a formal purchase mechanism. This means modeling future liabilities using the simplified formula and creating internal reserves or hedging solutions to cover potential exposure.

Additionally, importers should actively engage with upstream suppliers to reduce the embedded emissions of their products. **Reducing the declared emissions below the adjusted benchmark ( $AF \times BV$ ) will result in zero CBAM cost, even at high ETS prices. This can be achieved through supply chain adjustments, such as sourcing from producers using electric arc furnaces or low-carbon energy inputs.**

Companies that move early to calculate, monitor, and manage their CBAM exposure will be in a stronger position to adapt to the evolving regulatory environment. Conversely, businesses that underestimate the financial and operational impact of CBAM risk face sudden cost shocks, regulatory penalties, or loss of market competitiveness.

## Conclusion

CBAM is transforming the landscape of international trade by monetizing carbon emissions embedded in imported goods. As the system transitions from reporting to financial compensation, importers must prepare for real costs based on real emissions. Although the calculation formula is clear, its application is complicated by regulatory delays, the absence of Benchmark Values, pricing volatility, and the mismatch between legal obligations and certificate availability.

Despite these challenges, one fact remains certain: from January 2026, CBAM compensation is mandatory. Companies cannot afford to wait for perfect clarity. They must act now, calculating exposure, planning hedges cautiously, and reducing emissions wherever possible. Understanding the full mechanics of CBAM cost calculation is not just a compliance task – it is a strategic imperative. ■

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