CBAM Explained: What Indian Exporters Need to Know

Introduction

A significant carbon pricing mechanism is reshaping the economics of international trade, and Indian exporters in several key industries are directly in its path. The European Union's Carbon Border Adjustment Mechanism — universally known by its acronym, CBAM — entered its transitional reporting phase in October 2023 and will begin generating actual financial liabilities for exporters from 2026 onwards.

For CFOs, export managers, procurement heads and sustainability officers at Indian manufacturing and industrial companies, CBAM is not a distant regulatory development to monitor passively. It is an active compliance obligation with direct financial consequences, and the window to prepare effectively is narrowing.

This article provides a comprehensive, practical explanation of CBAM — what it is, why the EU implemented it, which Indian industries are affected, what the compliance requirements entail and how businesses should be responding right now.

What Is CBAM and Why Did the EU Create It?

The Carbon Border Adjustment Mechanism is a trade measure introduced by the European Union as part of its European Green Deal and Fit for 55 package — a set of legislative initiatives designed to reduce EU greenhouse gas emissions by at least 55 percent by 2030 relative to 1990 levels.

The fundamental problem CBAM addresses is carbon leakage. Under the EU Emissions Trading System (ETS), European manufacturers pay for the CO2 they emit — a cost that incentivizes cleaner production but also makes European goods more expensive than competitors' products from regions with no equivalent carbon pricing. Without a border adjustment, EU climate policy could simply shift production — and emissions — to non-EU countries rather than reducing global emissions.

CBAM solves this by requiring importers of certain goods into the EU to purchase CBAM certificates corresponding to the carbon emissions embedded in their products. The mechanism effectively equalizes the carbon cost between EU-produced goods and imported alternatives, removing the competitive advantage that high-carbon production confers on exporters from countries without carbon pricing.

In practice, this means that if a European steel producer pays the EU ETS carbon price for the emissions from producing one tonne of steel, an exporter selling the same steel into the EU will also face an equivalent carbon cost — creating a level playing field based on carbon intensity rather than allowing cheaper high-emission production to undercut European manufacturers.

Which Sectors Are Initially Covered?

CBAM launched with coverage of six product categories selected for their carbon intensity and the risk of carbon leakage:

- Steel and iron: Including flat-rolled products, bars, rods, profiles and tubes
- Aluminium: Including unwrought aluminium, aluminium products and certain downstream goods
- Cement: Covering major cement clinker and cement products
- Fertilisers: Urea, ammonium nitrate, mixed fertilisers and certain nitrogen compounds
- Electricity: Cross-border electricity imports into the EU
- Hydrogen: Both grey hydrogen and clean hydrogen variants

For Indian exporters, steel and aluminium are the most immediately significant categories. India is a major exporter of steel products to the EU, and the aluminium sector's exposure is growing with the expansion of downstream product coverage. The EU has confirmed that CBAM's product scope will expand progressively in subsequent review cycles, with organic chemicals, polymers and other carbon-intensive goods anticipated for inclusion.

The CBAM Timeline

Understanding the CBAM timeline is critical for planning compliance activities:

- October 2023 to December 2025: Transitional Phase. Importers must submit quarterly reports on the embedded emissions of CBAM goods imported into the EU. No financial payments are required during this phase, but non-reporting or inaccurate reporting carries penalties for EU importers — creating immediate pressure on their supply chains.
- January 2026 onwards: Financial Phase. Importers must purchase and surrender CBAM certificates corresponding to the verified embedded emissions of their imported goods. The CBAM certificate price is linked to the EU ETS carbon price, which has ranged from EUR 50 to EUR 100 per tonne of CO2 equivalent.
- 2034: Full Phase-In. Free allowances under the EU ETS will be fully phased out for sectors covered by CBAM, completing the transition to a full carbon border price.

Understanding Embedded Emissions

The concept of embedded emissions — also referred to as embodied emissions — is central to CBAM compliance and is one of the most technically complex aspects of the mechanism.

Embedded emissions are the greenhouse gases released during the production of a good, measured at the point of export. For a tonne of steel sheet, this includes the emissions from iron ore processing, coking coal combustion in the blast furnace, electric arc furnace operations, rolling and finishing processes, and the electricity consumed in production.

The CBAM regulation specifies a precise methodology for calculating these emissions, including the boundary between direct and indirect emissions (from electricity consumption), the treatment of precursor materials and the acceptable verification standards. Exporters who cannot provide verified embedded emission data will face default emission values — conservatively high figures set by the EU that result in higher financial obligations.

Compliance Requirements for Exporters

For Indian manufacturers exporting CBAM-covered goods to the EU, compliance requires coordination with your EU-based importers and a systematic internal data collection program:

- Production process mapping: Document all processes and inputs in the production of CBAM goods, identifying all direct emission sources
- Emission factor data: Collect verified emission factors for all energy inputs, including electricity grid emission factors and fuel consumption data
- Carbon accounting system: Implement a carbon accounting framework capable of calculating verified embedded emissions per tonne of product at the required level of granularity
- Verification: Embedded emissions data must ultimately be verified by an accredited third-party verifier recognized by the EU
- Data sharing: Provide verified emission data to EU importers in the format required for their CBAM reporting

The Financial Impact on Indian Exporters

The direct financial impact of CBAM depends on the carbon intensity of your production and the EU ETS carbon price. At EUR 70 per tonne CO2 equivalent — a representative middle estimate — a tonne of steel with embedded emissions of 2 tonnes CO2e would incur a CBAM financial obligation of EUR 140 per tonne, applied to all EU-bound exports.

For a mid-sized Indian steel manufacturer exporting 100,000 tonnes annually to the EU, this implies a potential CBAM obligation in the range of EUR 14 million per year. While actual obligations depend on verified emissions and any applicable credits for carbon costs already paid in India, the order of magnitude demonstrates that CBAM represents a material financial exposure requiring proactive management.

The Role of Renewable Energy in CBAM Compliance

This is where the intersection of sustainability strategy and trade compliance becomes financially concrete. One of the most effective strategies for reducing CBAM financial exposure is reducing the carbon intensity of production — and renewable energy adoption is one of the highest-impact levers available.

Switching from grid electricity (which carries the average grid emission factor) to captive solar power directly reduces the embedded emission intensity of manufactured goods. For electricity-intensive industries such as aluminium and steel, the difference between grid-powered and solar-powered production can be several tenths of a tonne of CO2 per tonne of product — a difference that translates directly into reduced CBAM certificate requirements.

Companies that have already invested in renewable energy infrastructure and can document their emission reductions with internationally accepted verification standards will face materially lower CBAM obligations than competitors still reliant on high-emission grid power.

Practical Action Plan for Exporters

- Immediate (Now): Identify all EU-bound product lines and confirm whether they fall within current or anticipated CBAM scope
- Within 3 months: Engage your EU importers to understand their current reporting obligations and their data requirements from you as a supplier
- Within 6 months: Conduct a carbon footprint assessment of your CBAM-relevant production processes to establish your baseline embedded emissions
- Within 12 months: Implement a systematic carbon accounting system and identify emission reduction opportunities with the highest impact on CBAM exposure
- By 2025: Complete third-party verification of embedded emission data and have verified reporting in place before the financial phase begins

- Strategic: Evaluate renewable energy investments — particularly captive solar and green power purchase agreements — explicitly in the context of their CBAM emission reduction benefit

Frequently Misunderstood CBAM Concepts

Several aspects of CBAM are commonly misunderstood in industry discussions:

- CBAM is an obligation on EU importers, not directly on Indian exporters — but EU importers will pass the obligation back through commercial relationships with their suppliers, making it a practical commercial pressure on exporters regardless of the formal legal structure.
- Default emission values are not a safe harbor. The EU has set default embedded emission values at conservative high levels, specifically to incentivize exporters to calculate and verify their actual emissions rather than accept the default.
- CBAM does not require Indian companies to pay a carbon tax to the Indian government. It applies at the EU border upon import, paid by the EU importer.
- Carbon credits from voluntary schemes do not automatically offset CBAM obligations. The mechanism recognizes only mandatory carbon pricing schemes with specific equivalence criteria.

Key Takeaways

- CBAM creates financial carbon costs on exports to the EU, with full financial obligations beginning January 2026.
- Steel, aluminium, cement, fertilisers and hydrogen are the initial covered sectors — with expansion planned.
- Embedded emission calculation and third-party verification are core technical compliance requirements.
- Renewable energy adoption directly reduces embedded emission intensity and therefore CBAM financial exposure.
- Indian exporters should begin carbon accounting preparation now — the transitional phase reporting window is already open.

Frequently Asked Questions

Q1: Does CBAM apply to all Indian exports to the EU?

No. CBAM currently applies only to specific product categories: steel and iron, aluminium, cement, fertilisers, electricity and hydrogen. However, the EU has explicitly committed to reviewing and expanding the product scope in subsequent legislative cycles. Industries currently outside CBAM scope — including chemicals, polymers and manufactured goods — should monitor EU regulatory developments and begin carbon accounting preparation proactively rather than reactively.

Q2: What happens if an Indian exporter does not provide verified emission data?

If an exporter does not provide verified embedded emission data, the EU importer must use the default emission values published by the European Commission. These default values are deliberately set at conservative high levels — representing the average or above-average emission intensity of production in third countries — to incentivize actual measurement and verification. Using default values will result in higher CBAM certificate costs than using verified actual emissions for most modern, relatively efficient manufacturing operations.

Q3: Is there any credit or exemption available for Indian exporters under CBAM?

CBAM allows a credit for any mandatory carbon pricing already paid in the country of production, reducing the certificate obligation by the equivalent amount. India currently does not have a comprehensive national carbon pricing scheme, so this exemption is not available to most Indian exporters. The Perform Achieve and Trade (PAT) scheme provides energy efficiency certificates but these are not directly recognized under CBAM's current framework. This situation may evolve as India's carbon market develops.

Q4: How will CBAM affect the competitiveness of Indian steel exports to Europe?

CBAM will increase the effective landed cost of Indian steel in the EU market by an amount proportional to the embedded carbon intensity of Indian steel production and the prevailing EU ETS carbon price. Indian steel manufacturers who reduce their emission intensity — through renewable energy adoption, process efficiency improvements and fuel switching — will face lower CBAM costs and maintain better competitive positioning than higher-emission producers. The mechanism effectively creates a carbon competitiveness dimension to steel trade in addition to traditional price and quality factors.

Q5: What expertise is required to prepare a CBAM compliance program?

Effective CBAM preparation requires a multidisciplinary team spanning carbon accounting and life cycle assessment expertise, knowledge of EU CBAM technical regulations and the implementing regulation's measurement methodology requirements, internal process engineering capability to map production emission sources, and third-party verification expertise from an EU-recognized accredited verifier. Many industrial companies engage specialized CBAM advisory consultants to structure their compliance program and build internal capability over time.

Conclusion

CBAM represents a structural shift in the economics of carbon-intensive trade between India and the European Union. For affected industries, it is not a temporary regulatory burden but a permanent feature of the trade landscape that will only expand in scope and financial significance over time.

The businesses that will navigate this shift most successfully are those that begin building carbon accounting capability, engaging with their EU trade partners, and implementing emission reduction strategies — including renewable energy adoption — with urgency and a clear understanding of the financial stakes involved.