The CBAM Test:
Indian Steel's Future in Europe

ARE
ASIA RESEARCH
& ENGAGEMENT

INSIGHTS
September 2026

ARE
ASIA RESEARCH & ENGAGEMENT

INDIAN STEEL'S FUTURE IN EUROPE

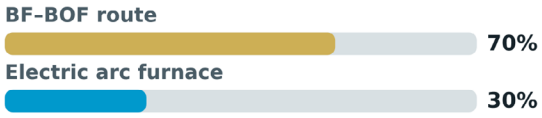
INSIGHTS

HEADLINE FIGURES

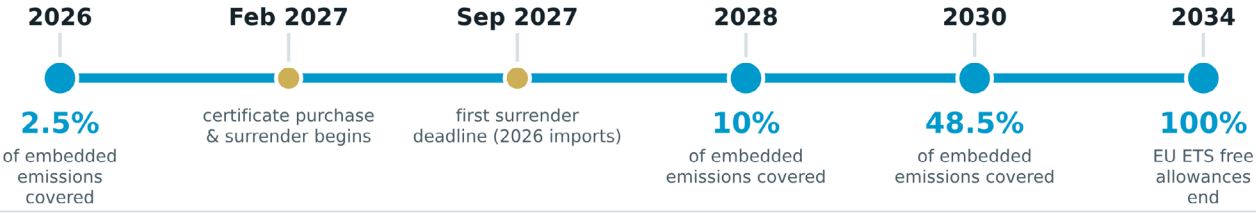
- **90%** of India's CBAM-covered exports are steel.
- Iron & steel exports to the EU reached **USD4.2** billion in FY2025**.**
- Only **1.6%** of India's total trade is at risk — but exposure is highly concentrated.
- Iron & steel = **66%** of all CBAM-covered EU imports by value; aluminium **28%**.
- India's carbon-readiness rating: **Low**.
- India has **no domestic carbon price** — zero offsetting credit against CBAM charges.

CARBON-INTENSITY GAP

- **70%** of Indian steel production uses the emissions-intensive BF–BOF route.
- **2.5t CO_2/t steel vs 1.8 t in the EU.**
- EAF could cut emissions **60–75%** vs BF–BOF.



CBAM PHASE-IN TIMELINE



ESTIMATED COST IMPACT ON INDIAN STEEL EXPORTS

Gold chips show net CBAM cost as a share of export value in each year.

TRADE & ECONOMIC IMPACT

- Indian exporters may need to reduce prices by **15–22%** by 2034 to absorb the carbon-tax burden.
- EU steel imports from India could decline by around **24%** cumulatively by 2034 under the medium carbon-price scenario.
- Modelled GDP impact: **0.02–0.03%** (**USD792 million–1.19 billion**).

COMPANY EXPOSURE

JSW STEEL
~1.3 million tonnes of EU exports annually.
Estimated 2030 CBAM cost: **€130–160 million**.

TATA STEEL INDIA
11.4% of India's total steel exports to the EU.
Estimated 2030 cost: **€90–130 million**.

SAIL
More than **95%** BF–BOF production.
Potential 2030 cost: **€80–120 / tonne**.

JSPL
Estimated 2030 cost: **€60–80 million**.
EBITDA pressure of **~2–3 pp** on EU-bound volumes.

Introduction

The European Union introduced the Carbon Border Adjustment Mechanism (CBAM) to align the carbon cost of imports with the costs borne by domestic producers under the EU Emissions Trading System (ETS). Iron and Steel is expected to feel the largest impact, since the sector has strong trade exposure and CBAM targets sectors with high emissions intensity.

For India, this matters because, though exports account for a small overall share of the country's production, steel forms the core of its CBAM exposure and a large percentage of Indian steel output still comes from emissions intensive routes.

This article examines CBAM through the lens of Indian steel. It does not treat CBAM only as a trade barrier but also as a test of competitiveness that links export performance to embedded emissions, verified reporting, and decarbonisation capacity. That framing is important because not all firms will respond in the same way. Producers with lower emissions processes, stronger data systems, and access to cleaner energy should absorb the transition more effectively than firms that rely on conventional blast furnace production and weak monitoring systems.

The paper uses secondary research from peer reviewed studies, policy papers, industry reports, and official publications. It focuses on the period from 2026, when financial obligations begin, to 2034, when the EU will remove free allowances in full under the current pathway.

Key simplifications introduced under the EU's Omnibus package (adopted in October 2025) have been incorporated throughout this paper. The deadline for certificate purchase and surrender has been moved to February 2027 (from the original January 2026 start); the quarterly certificate holding requirement has been reduced from 80% to 50% of embedded emissions; and a new de minimis

Table 1: CBAM Timeline: from transition to cost impact

1. **Transitional**
   Oct 2023 – Dec 2025
   KEY OBLIGATION
   Quarterly emissions reporting only
   FINANCIAL IMPACT
   No financial cost

2. **Pricing Starts**
   Jan 2026
   KEY OBLIGATION
   CBAM certificates become purchasable; definitive phase begins
   FINANCIAL IMPACT
   Partial cost, phased in as free EU ETS allowances reduce

3. **Certificate Sale**
   Feb 1, 2027
   KEY OBLIGATION
   First CBAM certificate surrender obligation
   FINANCIAL IMPACT
   Rising costs as free allocations phase out

4. **First Compliance Deadline**
   Sep 30, 2027
   KEY OBLIGATION
   Importers must surrender certificates for 2026 imports
   FINANCIAL IMPACT
   Full compliance required

5. **Full Effect**
   Jan 2034
   KEY OBLIGATION
   EU ETS free allocations fully phased out
   FINANCIAL IMPACT
   100% CBAM cost, that is ~EUR158/tonne gross on BF-BOF Indian steel at Q1 2026 CBAM price of EUR75.36/tCO2 (the EUR173.8/t figure was based on earlier higher ETS price projections; actual 2034 cost will depend on prevailing EUA prices)

threshold exempts importers handling less than 50 tonnes of CBAM goods annually from full declarant obligations. These changes moderate the administrative burden in 2026 but do not alter the long-run financial trajectory toward full cost exposure by 2034. However, this can ease some cashflow burden on exporters as well as possible exceptions for some smaller secondary steel exporters.

CBAM design and why it matters for steel

CBAM applies a carbon price on imports into the EU that reflects the carbon cost that EU producers face under the EU ETS. During the transitional phase (October 2023 to December 2025), importers only reported embedded emissions without financial obligation. The definitive financial phase began in January 2026, from when importers must register as authorised CBAM declarants and report annual embedded emissions.

> **"CBAM currently covers five product categories – but iron & steel accounts for 66% of covered imports by value."**

Critically, actual certificate purchase and surrender began only from February 2027 (per the October 2025 Omnibus simplification package). The CBAM factor – that is the share of embedded emissions requiring certificate coverage – starts at just 2.5% in 2026, stepping up to 10% in 2028, 48.5% in 2030, and reaching 100% by 2034 as EU ETS free allowances are fully phased out.

CBAM currently covers five product categories: Iron & Steel (66% of covered imports by value), Aluminium (28% by value), Cement, Fertilisers, and Hydrogen. The EU plans to expand CBAM to polymers, chemicals, and downstream manufactured goods by 2030.

For India specifically, 1.6% of total trade is at risk, according to Bloomberg New Energy Finance data (BNEF). While proportionally small, iron and steel exports to the EU amounted to USD4.2 billion in FY2025, representing about two-thirds of industry shipments, so there is much to respond to. India at present does not have a domestic carbon price - meaning zero offsetting credit against CBAM charges. BNEF also ranks India's carbon readiness as "Low".

Now carbon intensity will shape steel trade competitiveness much more directly. Steel sits at the centre of the mechanism for three reasons. It has high direct emissions, large cross-border trade flows, and viable low-emissions alternatives now exist, even if they remain costlier in most markets. CBAM therefore changes the basis of competition.

Price, logistics, and quality still matter, but embedded emissions now affect market access and realised margins as well.

For Indian exporters, CBAM creates two immediate pressures:

1. Firms must generate plant-level emissions data that EU authorities accept.
2. Firms with higher emissions intensity will either absorb the carbon cost through lower margins or pass it on through higher prices, which may reduce demand.

This distinction between reporting readiness and production readiness matters. A producer may comply with reporting rules while still remaining uncompetitive on carbon cost.

India's exposure to CBAM

India's exposure to CBAM comes from both export composition and production structure. Iron and steel account for the largest share of India's CBAM-exposed exports. Around 90% of India's CBAM-covered exports come from steel.

This concentration creates sectoral risk. If India exported a more diversified basket of lower emissions products into the EU, CBAM would spread the burden across industries. Instead, it falls heavily on a single hard-to-abate sector. That increases the macro sensitivity of the policy for India, even if the aggregate GDP effect appears modest in modelled results.

It is estimated that under a CBAM-only scenario, India's GDP will be impacted by about 0.02% to 0.03% (about USD792 million to USD1.19 billion), because carbon-related revenue flows out to the EU rather than remaining in the domestic economy.

It also finds that iron and steel, cement, aluminium, and fertilisers face output and export pressure, with steel among the most exposed sectors. The rules for the downstream products are still being framed – potentially, the most impacted could be auto-ancillary and white-goods exports, which could represent an additional burden by 2030.

This macro impact is small in percentage terms, but it can still mask sharp distributional effects. Output losses may cluster in carbon-intensive regions, large integrated producers, and upstream value chains such as coking coal, power, transport, and industrial services. A trade measure that looks modest at the national level can still reshape a sector's investment direction.

Why Indian steel faces above average risk

Indian steel faces above-average CBAM risk because its production base remains relatively emissions-intensive. Research published by Energy Policy into the steel sector in Vietnam – another country significantly impacted – notes that higher-than-average emissions intensity reduces export competitiveness under CBAM, but CBAM alone does not force a major technology shift unless domestic carbon

Table 2: CBAM Cost Escalation for Indian Steel Exports, 2026–2034

1

2026

Partial phase-in

EU ETS EST. PRICE
EUR75/tonne (Q1 2026 actual CBAM price: EUR75.36; EUA range EUR60–95 in 2025–26)

CBAM COST PER TONNE (INDIA)
~EUR3–4 net/tonne (CBAM factor = 2.5% in 2026; gross ~EUR158/t × 2.5%)

% OF STEEL EXPORT VALUE
~0.4–0.5% (net cost is minor in 2026; full impact deferred to 2034)

2

2028

Accelerating

EU ETS EST. PRICE
EUR90–105/tonne

CBAM COST PER TONNE (INDIA)
~EUR10–14 net/tonne (CBAM factor = 10% in 2028)

% OF STEEL EXPORT VALUE
~1.5–2%

3

2030

Significant impact

EU ETS EST. PRICE
EUR110–130/tonne

CBAM COST PER TONNE (INDIA)
~EUR68–89 net/tonne (CBAM factor = 48.5% in 2030)

% OF STEEL EXPORT VALUE
~7–9% (material impact begins here)

4

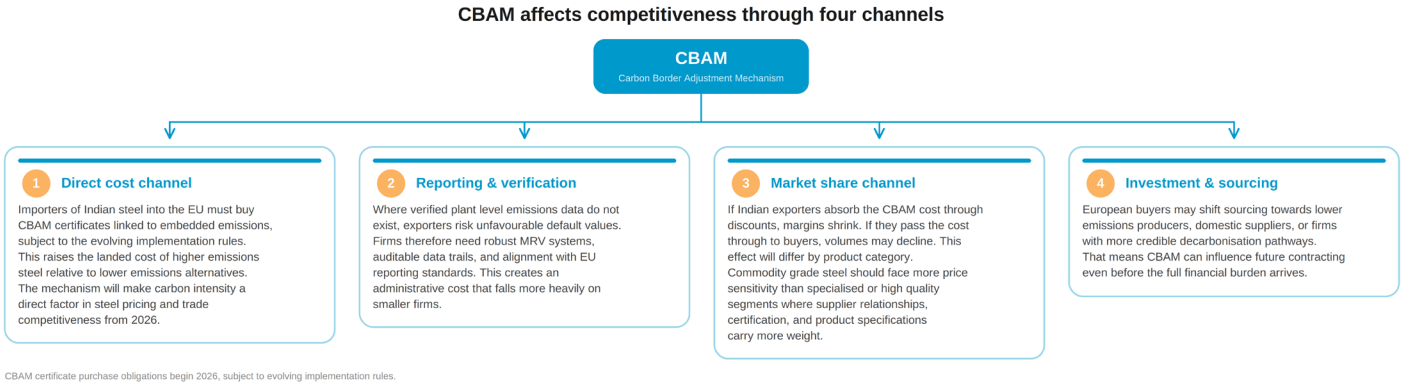
2034

Full effect

EU ETS EST. PRICE
EUR130–150/tonne

CBAM COST PER TONNE (INDIA)
EUR170–200 (full effect)

% OF STEEL EXPORT VALUE
~16–25%



"Without a recognised carbon price at home, Indian exporters cannot offset CBAM liability – unlike competitors in the UK, South Korea, or Taiwan."

pricing or other internal policy measures reinforce the signal. The same logic applies to India.

A major reason lies in the production route mix. Large Indian producers still rely heavily on blast furnace and basic oxygen furnace routes, accounting for 70% of the total production. These routes generate 2.5 tCO_2/tonne of steel, against the EU average of 1.8 tCO_2/tonne. India also uses coal-based direct reduced iron at scale, which lowers some dependence on imported coking coal but does not create a low-emissions pathway by itself. The result is that average embedded emissions in Indian steel often exceed those of cleaner EU production mixes.

Another reason lies in the absence of a broad domestic carbon price. Without a recognised carbon price at home, Indian exporters cannot offset CBAM liability through domestic payments, unlike competitors in the UK (USD69.9/tonne carbon price), South Korea (USD6.5/tonne), or Taiwan (USD9.0/tonne).

A domestic carbon tax combined with CBAM could soften macroeconomic losses because part of the carbon revenue remains within India rather than flowing outwards.

Key insight:

The CBAM net cost in 2026 is small (~EUR3–4/tonne) because of the 2.5% CBAM factor.

The significant impact will accumulate toward 2030–2034. By the time of full phase-in in 2034, the New Delhi-based Global Trade Research Initiative estimates that Indian exporters may need to cut prices by 15–22% to absorb the full carbon tax burden.

Under the medium carbon price scenario, EU imports of steel from India could decline ~24% cumulatively by 2034.

The sector also faces structural constraints on decarbonisation. Scrap availability remains limited relative to long term electric arc furnace ambitions. Renewable electricity access varies across states and industrial clusters. Green hydrogen remains too expensive for broad steel use at present.

Smaller firms often lack both the capital and the technical capacity to install advanced emissions monitoring systems or shift quickly to cleaner production routes.

Company-level impact: which Indian steel player gets hit hardest?

JSW Steel · Highest absolute exposure

EU export volume at risk	~1.3 Mt p.a. — largest single Indian exposure
EU share of revenue	Est. 8–12% of consolidated revenue
Primary technology	BF-BOF dominated, high carbon intensity
CBAM cost (2026)	~€5m net p.a.
CBAM cost (2030)	€130–160m net p.a.
Revenue/profit risk	5–12% EU revenue reduction; 3–5ppt EBITDA compression
Mitigation	Plant-wise verification; $500M sustainability bonds; net-zero 2050

Tata Steel India · Bifurcated but significant

EU export share	11.4% of India's total steel exports to EU
Unique position	EU subsidiaries (UK/Netherlands) under EU ETS; Ludhiana EAF pilot (0.75Mt) live
CBAM cost (2026)	€30–45m p.a. on India-origin exports
CBAM cost (2030)	€90–130m p.a.
Revenue/profit risk	Moderate — EU subsidiary partially shields consolidated P&L
Mitigation	Ludhiana EAF (2025–26); 379MW captive renewables; CCUS pilot at Jamshedpur

SAIL · State-owned, most vulnerable

Technology profile	95%+ BF-BOF, highest carbon intensity among majors
Carbon readiness	Minimal green investment to date, no EAF capacity
EU export share	Smaller volumes but among the highest emission intensities
CBAM cost (2030)	Potentially €80–120/tonne — commercially unviable
Revenue/profit risk	High risk of complete EU market exit
Mitigation	Limited; largely reliant on policy response; exploring MEA diversification

JSPL · Moderate, growing exposure

Technology mix	BF-BOF + DRI — lower average emissions than SAIL/JSW
EU export trend	Growing presence in long products and structural steel
CBAM cost (2026)	€20–30m p.a., manageable short-term
CBAM cost (2030)	€60–80m p.a. as phase-in accelerates
Revenue/profit risk	Moderate — DRI mix buffers ~2–3ppt EBITDA impact
Mitigation	Expanding DRI capacity; net-zero 2045; green hydrogen DRI route

Indian companies and the government are likely to pursue a combination of short-term defensive strategies and longer-term structural transformation.

2026-2028 Near-Term Responses

Market Diversification

Redirecting exports to Middle East, Africa, ASEAN markets where carbon tariffs do not apply. JSW and Tata Steel have already started offering flexible payment terms and faster delivery times to Middle Eastern buyers.

Plant-Wise Emissions Optimisation

Prioritising export shipments from lowest-emission plants and production lines. JSW is pursuing plant-wise CBAM certification, its greenest plants serve EU buyers; older capacity serves domestic or non-EU export markets.

Default Value Avoidance

Investing in Monitoring, Reporting & Verification (MRV) infrastructure. In the absence of verified emissions data, EU authorities apply the highest "default" values, significantly inflating costs. Proper data systems are a direct cost-saving mechanism.

Lobbying for MRAs

Pushing for India-EU Mutual Recognition Agreements on emissions certification, which would allow Indian certifying bodies' data to be accepted by EU authorities.

Price Concessions

Absorbing part of the CBAM cost through price reductions to retain EU market share, particularly for premium products where relationships and quality matter.

2028-2032 Medium-Term Structural Shifts

Technology Transition, EAF Adoption

Scaling electric arc furnace (EAF) capacity, which can reduce emissions by 60–75% versus BF-BOF. Tata Steel's Ludhiana EAF plant is the first major step. JSPL is expanding DRI capacity. Both Tata Steel and JSW Steel have stated that they plan to put additional 3 MT each of EAF based plants in coming years.

Renewable Energy Integration

Securing captive renewable power to decarbonise energy-intensive processes. Tata Steel's 379MW renewable programme and JSW's sustainability bonds (USD500 million) signal this direction.

Green Hydrogen Roadmap

India's steel ministry has outlined a decarbonisation roadmap targeting hydrogen-based DRI by 2035–2040. Cost of green hydrogen needs to fall to USD2.50–3/kg to be economically viable.

Production Shifting

Tata Steel and JSW, both with EU-based operations, may shift more EU-bound production to their European facilities, which already operate under EU ETS and face no incremental CBAM cost.

Premium 'Green Steel' Positioning

Developing and marketing low-carbon steel products to EU buyers willing to pay a premium for certified low-emission material.

2032-2034 and Beyond Long-Term Strategic Options

Carbon Capture, Utilisation & Storage (CCUS)

India's medium-term decarbonisation plan targets CCUS becoming commercially viable by 2045. Early movers will gain CBAM cost advantages.

India Carbon Market

Establishment of a domestic carbon trading scheme would allow Indian producers to offset CBAM costs by demonstrating a domestic carbon price, the single most-effective policy lever available.

WTO Challenges

India has formally challenged CBAM's legality as a trade barrier. While WTO rulings take years, a successful challenge could modify CBAM's application to developing countries.

Downstream Product Shift

Moving up the value chain into processed steel products (auto components, machinery) may initially escape CBAM scope, though the EU plans expansion to downstream products by 2030.

What are the Policy Implications for India?

India should treat CBAM as an industrial policy issue, not only a trade disruption issue.

A narrow legal challenge at the WTO may have political value, but it will not remove the underlying market signal if carbon differentiated procurement and financing continue to spread globally.

A strong policy response would include five priorities:

1. **Build a national industrial MRV architecture.**
   India needs credible measurement standards for steel and other CBAM-covered sectors. Export competitiveness now depends on the quality of emissions data.

2. **Accelerate the domestic carbon market in a sector sensitive way.**
   If India develops a workable carbon market or carbon pricing framework, it can retain more transition value domestically and support targeted recycling of revenue.

3. **Support low emissions steel investment.**
   This includes concessional finance, viability gap support, renewable power access, and infrastructure for scrap and hydrogen.

4. **Protect smaller firms during transition.**
   Larger firms can self-finance compliance more easily. MSMEs need shared verification systems, technical support, and cluster-based decarbonisation programmes.

5. **Link trade negotiations with industrial transition.**
   Any India EU engagement on CBAM should focus on equivalence of verification, recognition of domestic standards, and finance or technology support, rather than only exemptions.

Conclusion

CBAM changes the basis of competition for steel exports into the European market. For India, the challenge is acute because iron and steel dominate the country's CBAM-covered exports and because much of domestic production still comes from emissions-intensive routes. Current research suggests that CBAM will weaken the competitiveness of Indian steel in the EU, but will not by itself deliver a rapid transition to low-emissions production.

The main effect in the near term will be differentiation within the sector. Firms with stronger emissions measurement, cleaner production routes, renewable power access, and clearer decarbonisation plans should adapt faster. Firms that depend on blast-furnace production, weak MRV systems, and delayed capital investment will face greater margin pressure and higher risk of market loss.

The policy conclusion is clear. India should not treat CBAM only as an external trade barrier. It should treat CBAM as a signal to accelerate industrial carbon measurement, support lower-emissions steelmaking, and develop domestic policy tools that retain transition value within the country. The strategic question is no longer whether carbon will shape steel trade; the question is which producers will remain competitive as that shift gathers pace.

Disclaimer

ARE has taken all reasonable precautions to ensure that the information contained in this Report is current and accurate as of the date of benchmarking. No representations or warranties are made (expressed or implied) as to the reliability, accuracy, or completeness of such information. Although every reasonable effort is made to present current and accurate information, ARE does not take any responsibility for any loss arising directly or indirectly from the use of, or any responsibility for any loss arising directly or indirectly from the use of, or any action taken in reliance on any information appearing in this Report.