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EXPERT OPINION

Q&A

Q1 There's a lot of talk about what decarbonisation will cost Indian metal producers — but much less about what it costs them today. What does the transition actually require per tonne, and how does that compare with the CBAM exposure of a producer who keeps postponing?

The first thing I tell producers: stop treating "doing nothing" as the free option. It isn't free — you just haven't been handed the invoice yet.

The transition cost is a curve, not a number. The early moves — waste-heat recovery, efficiency, blending in renewable power — are cheap, and most pay for themselves inside two years. The hard end, genuinely low-carbon steel via the hydrogen route, still carries a premium of USD 150–250 a tonne today, mostly because green hydrogen sits above USD 3/kg and only turns economic for steel near USD 1.5–1.6/kg. That gap narrows every year.

Now the cost of waiting — and here's where almost everyone misreads CBAM. **You are not taxed on your full emissions. You are taxed on the gap between your emissions and the EU's benchmark,** after a free-allocation cushion that shrinks to zero by 2034. The formula, in plain terms:

CBAM cost/tonne = [Direct emissions − (EU benchmark × free-allocation share)] × EU carbon price

Let me run it on real numbers from our platform. Across the Indian steel installations we've mapped, the average works out to about **2.5 tCO_2 per tonne in total** — but for the tax this year, only direct emissions count. CBAM excludes indirect (grid-electricity) emissions for steel in this phase. Strip those out and the taxable figure — the direct Specific Embedded Emissions — comes to about **2.10 tCO_2 per tonne.** The EU benchmark for the blast-furnace (hot-metal) route is **1.37.** The carbon price today is about **€75.**

So, year one:

Chargeable = 2.10 − (1.37 × 97.5%) = 2.10 − 1.336 = **0.76 tCO_2**
CBAM cost 2026 = 0.76 × €75 ≈ **€57 per tonne** (~₹5,300)

Now watch what happens as the free-allocation cushion is withdrawn on the EU's fixed schedule:
CBAM cost per tonne of Indian BF steel (direct SEE 2.10, benchmark 1.37, €75/t)
2026 — cushion 97.5% → taxed on 0.76 t → **~€57/t**
2028 — cushion 90.0% → taxed on 0.87 t → **~€65/t**
2030 — cushion 51.5% → taxed on 1.39 t → **~€105/t**
2032 — cushion 26.5% → taxed on 1.74 t → **~€130/t**
2034 — cushion 0% → taxed on the full 2.10 t → **~€158/t**

(A small cross-sectoral correction factor applies; treat these as directional. The 2029→2030 step is the steepest in the whole schedule.)

Read that slowly, because it dismantles the "we'll deal with it later" instinct on two fronts. First, the bill is already real — ~€57 a tonne today, not a rounding error. Second — and this is the part few producers have priced in — that 2.10 figure is artificially low right now, because the grid-power slice of your footprint (the 0.40 tonne gap to our 2.5 average) sits outside the tax net this year. The EU has already committed to reviewing indirect emissions back into scope. When that happens, your taxable base climbs back toward 2.5 at the same time as the free cushion vanishes. Two escalators, same staircase.

So the honest comparison is between a one-time investment that is falling, and a liability that is rising, already live, and about to widen its own base. Those two lines cross. Every producer crosses them — the only question is whether on your terms, or the regulator's.

Q2 CBAM is moving from reporting to real financial liability. Who's most exposed — large integrated players, mid-sized EAF and induction operators, or the downstream processors and exporters? And is the sector's data good enough to defend a declaration?

Everyone's exposed — but the ranking people expect is wrong.

The large integrated players have the highest intensity and so the biggest absolute bill. But they also have the capital and the measurement systems to respond. They'll feel it; they'll manage it.

The mid-sized EAF and induction units are where it gets interesting — and where the current rules create a trap and a mirage at the same time. On paper they look well-placed: their direct emissions are low, and since CBAM ignores grid power for steel this year, a scrap-fed EAF shows a very flattering number. But that advantage is partly an accounting illusion. The moment indirect emissions come into scope, an EAF running on a coal-heavy Indian grid loses much of its edge — because for electric steelmaking, the power is the footprint. So the producer who "wins" on today's CBAM maths may be the one most exposed to tomorrow's.

And there's the data trap underneath all of it: where you can't evidence your actual emissions, CBAM applies default values that assume the dirtiest plausible production. So a genuinely clean furnace gets taxed for carbon it never emitted, purely for want of proof. The downstream processors and exporters are the least equipped of all. They inherit the cost from upstream and they're the ones the European buyer actually invoices — liability without control.

Is the data good enough today? For most of the sector, no. Verified, installation-level, actual direct-emissions data — the kind that survives an accredited verifier — is still rare below the top tier. In our work that gap, not the carbon price, is the real crisis.

Under CBAM the winners won't be the greenest producers. They'll be the ones who can prove how green they are.

Q3 Buyers are starting to ask for Environmental Product Declarations and green-steel certification before they ask about price. How far has that changed procurement in India — and where does it still carry no weight against a cheaper, uncertified tonne?

- In India it's still more conversation than decision — but the pockets where it has flipped tell you exactly where this goes.

  Where the buyer is themselves accountable for a footprint — exporters, multinationals with Scope 3 targets, auto and renewable OEMs, green-building projects chasing certification — the EPD now comes before price. No declaration, no shortlist. That's real, and growing.

  But walk into a typical domestic infrastructure or construction tender and it's blunt: lowest price wins. A cheaper uncertified tonne beats a dearer certified one every time there's no regulatory pull or customer accountability forcing the question. I don't say that cynically — it's simply how procurement behaves until the rules change.

  And the rules are changing faster than most realise. By early 2026, 89 steel units held green-steel certification covering over 12 million tonnes, with the first integrated producer certified that same year. The pressure is arriving from two directions at once — CBAM on exports, green public procurement mandates building at home. The direction of travel isn't in doubt. The uniformity just isn't here yet.

Q4 Green steel is defined differently across markets and schemes. As a producer, how do you decide which standard to invest in — and what's the risk of backing one your buyers, or their regulators, later don't recognise?

- This genuinely keeps producers up at night, and rightly. India's own Green Steel Taxonomy sets the bar around 1.6–2.2 tonnes of CO_2 per tonne. The strictest global definitions sit below 0.5. Layer on ResponsibleSteel, the EU's near-zero thresholds, and every large buyer's bespoke ask — it's very easy to back the wrong horse.

  My advice is deliberately counter-intuitive: **don't invest in the badge. Invest in the measurement.**

  Build robust, verified, installation-level emissions data that is standard-agnostic. The hard, slow, expensive part is capturing the real numbers — not formatting them to a scheme. Once your data is trustworthy and verifier-ready,

mapping it to any certificate is a reporting exercise. Then anchor the specific certificate to where your demand actually lives — EU-recognized standards if you export there, the domestic taxonomy if you sell to Indian PSUs and government.

The producers who get stranded are the ones who chose a label for its marketing value with no data to defend it. Data travels across standards. A badge doesn't. And notice how this connects back to CBAM: the same verified direct-emissions dataset that defends your CBAM declaration is the asset that earns you any green certificate. Build it once, use it everywhere.

Q5 India is betting heavily on scrap-led EAF capacity to cut carbon intensity by 2030. Is the expansion moving fast enough — and what's the real constraint: scrap availability and quality, clean power, or the economics of switching off the blast-furnace route?

- Right direction, wrong pace — and the binding constraint isn't the one everyone names first.

The scrap story is real. The National Steel Policy wants 35–40% of our 2030 capacity via the EAF/induction route, which pushes ferrous-scrap demand from around 30 million tonnes today toward 70–80 million by 2030. We're already the world's second-largest scrap importer, imports meet about a quarter of our consumption, and global scrap is set to tighten — EU exports alone could fall by around a quarter this decade. Quality is uneven; collection is still largely informal. All true. But it's not the deepest problem.

Clean power is — and CBAM is about to prove it. As I noted earlier, the tax ignores grid emissions for steel today, which flatters the EAF route. But an electric furnace on a coal-heavy grid isn't low-carbon steel; you've just moved the emissions from the furnace to the power station. Once indirect emissions enter CBAM's scope — and they will — a scrap-led EAF built on dirty power will discover that its carbon advantage was never really there. Until the grid decarbonizes underneath it, scrap-led EAF delivers far less than the headline promises.

And the point nobody likes to say out loud: India's blast furnaces are young. Europe is retiring an ageing fleet; here, more than 40 million tonnes of capacity is only now coming due for relining before 2030, and the rest has decades of life and capital still to recover. Nobody voluntarily strands a ten-year-old blast furnace.

For scale — a tonne of scrap-based steel vs the ore route
Saves ~1.1 t iron ore, ~630 kg coking coal, ~55 kg limestone; ~58% lower GHG emissions. For a country importing 90%+ of its coking coal, that's strategic, not just green.

So if you force me to rank: clean power and the age of our capital stock first, scrap second. No single lever gets us there. Scrap policy, grid decarbonisation and a carbon-price signal like CBAM have to move together — pull any one alone, and 2030 stays exactly where it is today: a target on a slide.