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CARBON BORDERS & CEMENT TRADE

As the EU begins to impose carbon costs on emissions-intensive imports, cement trade is emerging as an early test of whether climate policy can cut emissions... without simply relocating them.

Climate change is no longer only an environmental concern. It is reshaping industrial strategy, trade policy and the terms of economic competition. Net-zero targets are making the cost of carbon a defining feature of manufacturing. However, producers in markets with stricter rules must pay compliance costs, while those in unregulated markets continue to sell CO₂-intensive goods without charge.

This imbalance has given rise to one of climate economics' most contested ideas: carbon leakage. When production shifts from tightly regulated economies to countries with weaker environmental rules, emissions do not disappear - they just move, undermining both climate ambitions and industrial competitiveness.

The logic behind the EU CBAM

The EU's Carbon Border Adjustment Mechanism (CBAM) is designed to address carbon leakage by attaching a CO₂ emissions cost to imports of emissions-intensive goods. In principle, it levels the playing field between foreign producers and manufacturers covered by the EU Emissions Trading

System (ETS). In practice, it is becoming something larger: a tool of trade policy, industrial protection and decarbonisation pressure. Cement, with its high emissions profile and exposure to cross-border trade, offers one of the clearest views of that shift.

How it works

The EU CBAM mechanism applies to imports of cement, iron and steel, aluminium, fertilisers, electricity and hydrogen into the 27 EU Member States (EU27). It began with a transitional reporting phase from 2023 to 2025 and entered its definitive regime in January 2026. At this point, importers became subject to carbon payment obligations linked to the EU ETS price. If a CO₂ cost has already been paid in the country of production, the amount already paid is deducted.

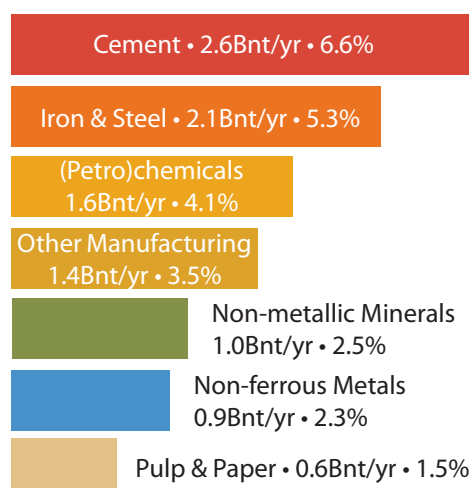
How the mechanism changes the market

For cement, the implications were immediate. Importers must now account for the embodied CO₂ emissions in each shipment and, where required, purchase CBAM certificates. In practical terms, CO₂-intensive imports have become more expensive at the EU27 border. Producers with lower emissions are therefore better placed to preserve market access. The mechanism does not only penalise CO₂-heavy trade - it also rewards measurement, verification and operational efficiency.

CBAM is a data regime as well as a border cost. Importers and their suppliers must gather plant-level emissions information, document their production methods, classify products correctly, retain auditable records and, in many cases, secure verification if they want to rely on actual emissions rather than more punitive default values. Importers above the threshold must become authorised declarants and surrender certificates tied to embedded emissions.

This bureaucratic burden presents a substantial additional challenge. Measuring carbon in hard-to-

Figure 1: CO₂ emissions by industrial sector and as a proportion of total global CO₂ emissions. Cement production stands apart not only because of its scale, but because process emissions make deep decarbonisation especially difficult. **Source:** Sector emissions estimates compiled from industry and climate-data references used in this article.



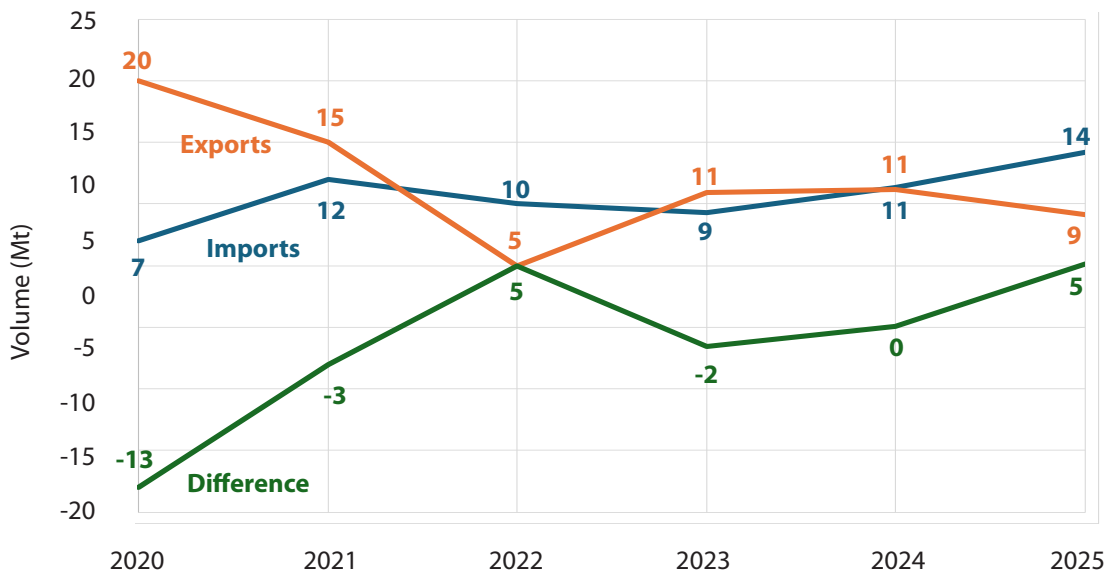


Figure 2: Europe's cement trade balance has become more variable in recent years, sharpening concerns about competitiveness and import exposure as carbon costs rise.

Source: EU27 cement trade figures compiled from trade-data references used in this article.

abate sectors is not straight-forward. Emissions vary with the fuel mix, clinker ratio, process efficiency, electricity source and the quality of plant data. The credibility of CBAM therefore depends not only on its price signal, but on the reliability and comparability of the emissions information behind it.

It is also important to remember that cost implications will not stop at the importer. Carbon costs are highly likely to move downstream into construction materials, infrastructure budgets and the cost of housing and public works. The extent of the pass-through will vary by market structure and competitive conditions, but research on carbon-cost transmission in construction supply chains suggests that at least part of the burden will travel well beyond the importer.

The three aims of the EU CBAM

The EU's CBAM is meant to do three things at once: 1. Prevent carbon leakage; 2. Protect the competitiveness of EU industry, and; 3. Pressure non-EU producers to reduce emissions in order to access the EU27 market. For policy-makers, it is a climate measure. For manufacturers, it is a commercial buffer. For trading partners outside of the EU27, it can look suspiciously like 'environmental protectionism.'

This, in turn, raises a question inside the EU27. Border protection only matters if it creates room for genuine industrial adjustment at home. If EU27 producers use the headroom provided to invest in cleaner kilns, lower-clinker products and carbon capture, CBAM could reinforce a real transition. If not, the mechanism risks shielding industry without materially accelerating its transformation.

The new geography of cement competition

Once CO₂ costs are applied at the border, trade competitiveness is no longer only determined by freight rates, scale or proximity to market. Emissions intensity begins to matter directly. A plant with lower emissions can become a strong exporter to the EU27, even when its plant-level costs are similar.

The likely result is not the end of cement trading, but a reordering of it. Cement imports into the EU27 will not disappear simply because carbon pricing becomes stricter. Instead, trade flows will become more selective. Producers with lower emissions and the ability to demonstrate compliance will be better placed to maintain access, while high-carbon exporters and those who struggle with the bureaucratic burden may choose to redirect their cement to markets with lower barriers to business.

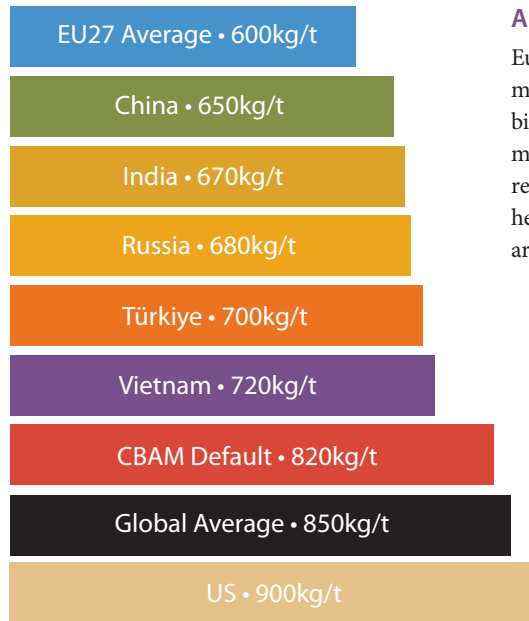




Figure 3: Average embodied CO₂ emissions per tonne of cement (kg/t). Even modest differences in emissions intensity can begin to reshape competitiveness once embedded carbon carries a direct cost at the border.

Source: Indicative emissions-intensity comparisons based on industry benchmarks and EC guidance on CBAM reporting methodology.

Note: CBAM default values apply when the EU cannot verify the actual emissions of a shipment. For methodology on embedded emissions, monitoring and reporting, see EC CBAM importer guidance.



This dynamic would strengthen intra-EU27 trade in cement while weakening the position of some non-EU suppliers. It may also contribute to a broader regionalisation of heavy-industry trade, in which carbon-regulated blocs trade more within their own systems and less with producers that operate under looser constraints.

Whether this reduces global emissions depends on what happens beyond the EU27. If exporters respond by modernising production, improving measurement and lowering CO₂ intensity, CBAM could help drive decarbonisation through supply chains worldwide. If they simply divert sales elsewhere, the policy may cut the EU27's emissions on paper while leaving the global total largely unchanged.

Will it work?

Whether the EU's CBAM succeeds will depend on more than tariff design. The system will work best if emissions measurements are credible, verification is enforceable, and the phase-out of free allowances remains aligned with the border charge. The EC has explicitly presented CBAM as part of a *gradual* transition linked to the withdrawal of free allocation, not as a stand-alone trade barrier.

Much of the politics of CBAM hinges on free allowances. If they remain too generous for too long, critics will argue that EU27 producers are being 'doubly protected.' If they are withdrawn too abruptly, the cement industry will argue that competitiveness is being exposed before decarbonisation is complete. The balance between those two pressures will shape how legitimate and durable CBAM appears, to all parties.

A policy with global implications

Europe is not alone in exploring the CBAM model. The broader significance lies in the possibility that carbon border measures may spread. If more economies adopt carbon pricing, emissions reporting and border adjustments, competition in heavy industry could shift away from regulatory arbitrage and toward genuine efficiency gains.

Critics argue that CBAM risks functioning as environmental protectionism, an especially difficult situation for exporters in developing markets that face compliance costs, limited access to decarbonisation finance and weaker monitoring capacity. Supporters counter that, without such mechanisms, ambitious climate policy becomes politically fragile because domestic industry bears the cost while import competition remains 'carbon blind.' The sharper criticism is that CBAM may prove administratively rigorous and politically effective in the EU27, while still falling short of meaningful global emissions reduction if trade simply reroutes CO₂-intensive products elsewhere. This is precisely why cement has become such an instructive test case, and why the debate has moved beyond economics into questions of law, legitimacy and power.

One of those questions is whether CBAM can be sustained within the wider trade order. Supporters argue that it is designed to mirror domestic carbon costs rather than discriminate arbitrarily against foreign producers, which strengthens its case under multilateral trade rules. Critics counter that the legal test will depend less on stated intent and more on how fairly and transparently the system is implemented in practice.

That same debate looks different from the perspective of many developing economies. The challenge is not only paying for CO₂, but in building the systems needed to measure it, verify it and reduce it, while still pursuing industrial growth. The EC says that it is providing technical assistance, while the World Bank Group has developed exposure indexes to identify countries most vulnerable to CBAM based on emissions intensity and export dependence. The EC's own note on CBAM and developing countries likewise acknowledges the need for support.

Two scenarios for carbon border policy

The central question is not whether carbon border measures will affect trade - they already do. The more important question is what kind of trading system they will ultimately lead to. One path leads to a more fragmented world economy, in which only a handful of jurisdictions impose meaningful



China • 13.1Bnt/yr

US • 4.6Bnt/yr

India • 3.2Bnt/yr

EU27 • 2.5Bnt/yr

Russia • 2.0Bnt/yr

Japan • 1.0Bnt/yr

Iran • 0.8Bnt/yr

Figure 4: Annual CO₂ emissions of major economies. A relatively small group of economies accounts for a disproportionate share of global CO₂ emissions, reinforcing why carbon-intensive trade has become a central concern of climate policy. **Source:** country-level CO₂ estimates compiled from global emissions references used in this article.

carbon costs and border adjustments. The other points toward a more coordinated system, where carbon accounting becomes a standard feature of industrial competition.

In the first scenario, Europe remains relatively alone. CBAM protects EU producers from the most obvious forms of carbon leakage and raises the cost of high-emissions imports, but it also increases the risk of trade diversion. Exporters that lose access to the EU27 market may not decarbonise. They may just redirect shipments to less regulated destinations. In this scenario, cement trade becomes more regionalised, compliance burdens fall unevenly across countries, and accusations of environmental protectionism become harder to dismiss.

In the second scenario, more countries adopt credible emissions reporting, domestic carbon pricing and border adjustments of their own. The result is not friction-free trade, but a more rules-based form of trade. Competition shifts away from exploiting weaker CO₂ regimes toward greater efficiency, lower emissions intensity and investment in cleaner processes. This would mean that long-term advantage increasingly belongs not to those in the least regulated markets, but to those that can withstand scrutiny in *any* jurisdiction.

This raises an obvious question: If more countries introduce carbon pricing, why would carbon border adjustments still be needed? The answer lies within embodied CO₂. Producers that invest earlier in lower-carbon processes will face a smaller CBAM burden because their embedded emissions are lower. Over time, this creates a stronger incentive for firms and governments to reduce emissions intensity. If designed well, the result could be less carbon-driven trade distortion and faster diffusion of clean technologies across global industry, supporting the longer-term push toward 2050 climate goals.

The second scenario is becoming more plausible. Other economies, including the UK, the US and Canada, are exploring their own versions of carbon border adjustment or related carbon-intensity measures. The more such policies spread, the more carbon accounting becomes a shared condition of market access rather than a uniquely EU demand.

The reality will most likely fall somewhere between these two extremes, but the direction of travel is already visible. As more governments experiment with carbon pricing and border measures, heavy industry is being pushed toward a new competitive logic: emissions performance is becoming as important as price, scale and geography. That is why cement has become such an important early indicator. It is not only a proving ground for climate policy, but also a signal of how global trade may change.

It is also why the argument extends beyond cement, which is an early indicator of what may happen in steel, aluminium, fertilisers and other carbon-intensive industries. What happens in our sector has implications for whether the next phase of globalisation will be shaped as much by carbon efficiency and traceability as by labour costs, energy prices and logistics.

Conclusion

Cement is one of the world's oldest building materials, yet it now sits at the centre of one of the newest arguments in global economic policy. The EU's CBAM is more than a technical add-on to climate regulation. It signals a new era in which carbon efficiency becomes part of trade competitiveness.

If CBAM encourages cleaner industrial production across borders, it could help close one of climate policy's most persistent loopholes. If it merely redraws trade routes without cutting emissions, it will deepen suspicion that carbon border measures are more about industrial strategy than environmental ambition. For the cement industry, the message is already clear: future competitiveness will depend less on producing the cheapest tonne than on producing the cleanest credible tonne.

What happens next will depend on the quality of implementation, the pace at which free EU ETS allowances are withdrawn, whether other jurisdictions adopt comparable mechanisms, and whether exporters respond by investing in cleaner production rather than simply redirecting trade. Cement is an early bellwether for CBAM. Will it reshape trade in ways that cut emissions, or simply move them around?

