

Solutions for exports of EU CBAM-covered goods



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SUMMARY

- *Export provisions are urgently needed in the EU CBAM to tackle competitiveness and carbon leakage risks.*
- *A tailored approach is essential to address carbon leakage risks across diverse industries.*
- *Carefully designed export adjustments can ensure WTO compliance while bolstering EU climate and industrial leadership.*
- *Non-tradable export adjustment certificates are proposed to offset carbon costs for exports while supporting decarbonization goals.*

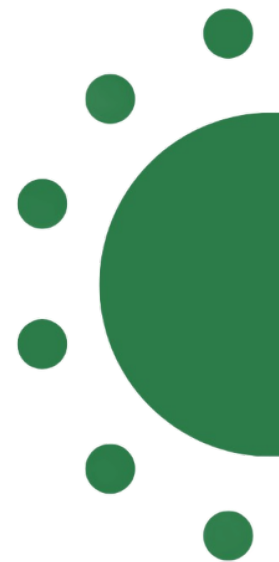


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1. Introduction

The European Roundtable on Climate Change and Sustainable Transition (ERCST) is an independent think tank dedicated to fostering informed debate and rigorous analysis on climate policy in the European Union (EU) and beyond. Since its inception, ERCST has sought to bridge the gap between stakeholders, policymakers, and researchers by providing evidence-based insights into the complex interplay of climate ambition, economic competitiveness, and global trade.

ERCST has established itself as a leading voice in the discourse on Carbon Border Adjustment Mechanisms (CBAM), a key component of its broader work on Border Carbon Adjustments (BCAs). Drawing from its comprehensive research and stakeholder engagement through focus groups, workshops, and roundtables, ERCST has explored the implications of CBAM on imports, trade dynamics, and global climate policy. This paper builds upon that foundation, turning attention to a vital yet underexamined issue: the treatment of exports of CBAM-covered goods.

Introduced in July 2021, CBAM seeks to level the playing field for EU producers by imposing carbon costs on imports equivalent to those under the EU Emissions Trading System (ETS). However, it provides no mechanism to address the carbon cost disadvantages faced by EU exporters competing in global markets, where rivals often operate without comparable carbon pricing. This omission threatens the economic viability of export-dependent industries and risks exacerbating global emissions through export-related carbon leakage.

ERCST has previously contributed extensively to this discourse, notably through its 2022 report, *"Treatment of Exports in the EU CBAM,"* exploring policy options to mitigate export-related carbon leakage. It proposed the use of existing EU ETS product benchmarks to issue non-tradable export adjustment certificates, which could be exchanged for EU Allowances (EUAs), aiming to balance leakage prevention with decarbonization incentives.

This work laid a foundation for further analysis, culminating in the 2024 report, *"Review of Carbon Leakage Risks of CBAM Export Goods,"* which evaluated the exposure of EU exports in CBAM sectors to carbon leakage risks. This later report underscored the economic and environmental significance of exports, advocating for a dynamic and sector-specific review process to assess leakage risks, distinct from standard EU ETS reporting. Together, these reports highlight ERCST's ongoing efforts to address the complexities of export provisions within the CBAM framework, offering actionable insights for policymakers.

ERCST is continuing its efforts on treatment of exports due to the escalating crisis of industrial viability and the critical upcoming European Commission decision process. Since CBAM's proposal, the trade landscape has shifted dramatically. Rising input costs, global overcapacity, and unilateral trade measures—such as U.S. tariffs—have intensified pressure on EU exporters.

Simultaneously, 2025 marks a pivotal year for the CBAM, with pending reviews, implementing acts, and delegated acts under the Omnibus 2025 EU framework set to finalize its design—including potential provisions for exports—before its definitive phase in 2026. These decisions will determine whether CBAM can effectively balance climate goals with safeguarding EU industrial resilience. Influential EU reports from Mario Draghi and Enrico Letta (Draghi, M., 2024; Letta, E, 2024), alongside the Competitiveness Compass and the Clean Industrial Deal, further underscore the urgency of integrating decarbonization with trade and industrial strategies.

This report aims to revisit and expand upon our earlier findings in light of these developments. It is structured as follows: Section 2 evaluates the limitations of the existing framework, emphasizing the urgent need for action by presenting evidence of vulnerabilities and practical challenges. Section 3 investigates a variety of potential solutions, including policy adjustments and supplementary strategies, to mitigate identified issues. Section 4 focuses on the technical aspects of designing an effective mechanism, weighing different approaches against core goals and feasibility. Section 5 addresses the critical issue of compliance with international standards, analyzing legal and trade implications in today’s evolving global environment. Finally, Section 6 synthesizes these findings into actionable recommendations, proposing steps for implementation and integration into broader processes.

2. What’s wrong with the Status Quo?

The EU’s CBAM, as introduced in the European Commission’s July 2021 proposal and refined through subsequent legislative iterations, represents a step toward addressing carbon leakage. By imposing a carbon cost on imports equivalent to that borne by EU producers under the EU ETS, it aims to level the playing field in the domestic market.

Yet, this focus on imports overlooks a critical channel of leakage: the loss of competitiveness of EU exports in global markets. As free allowances under the EU ETS are phased out—currently slated to decline to zero by 2034—EU producers face rising carbon costs that their competitors in jurisdictions with weaker or no carbon pricing do not. This asymmetry risks eroding EU market share abroad, with profound economic and environmental consequences.

The necessity of addressing exports stems from both empirical evidence and fundamental economic realities. ERCST’s prior analysis, corroborated by the Commission’s own Impact Assessment, highlights the materiality of exports in CBAM-covered sectors. For instance, in 2018, iron and steel exports accounted for 22% of EU27 production value, aluminum 18%, and fertilizers 14%, with absolute values reaching billions of euros annually. As well, EU-wide values mask significant regional vulnerabilities; for the cement industry while the overall percentage of EU average showed 7.7% in 2020 (but decreased steadily from 17.7% in 2014) over the last decade, seven EU member states in various years have seen cement exports at levels sometimes exceeding 50% of domestic production (e.g. in 2020 Greece was 59.8%) .

These sectors are not only export-oriented but also operate in competitive global commodity markets where cost pass-through is limited. The costs involved are significant; The European Cement Association has estimated that at an EUA price of €125 by 2030 and no free allocation, carbon costs would constitute over 50% of average production costs (Cembureau, 2022).

The European Commission's Impact Assessment (European Commission, 2021) estimates a 6.8% loss in export market share for CBAM-covered sectors due to the lack of export provisions—a figure that, while significant, may understate the risk for specific industries or installations where exports constitute a higher share of output and profits such as fertilizers, where some plants export up to 50% of production .

This loss of market share is not merely an economic concern; it carries a direct environmental cost. EU products in these sectors often exhibit lower carbon intensity than their global competitors. For example, Fertilizers Europe data show EU ammonia and nitric acid production comparing favorably to producers in Russia, North Africa, and the United States, European Aluminium highlights the EU's advantage over China and the Middle East, and Global Cement and Concrete Association data show a marked advantage of EU emissions per tonne of clinker versus global averages starting in 2012.

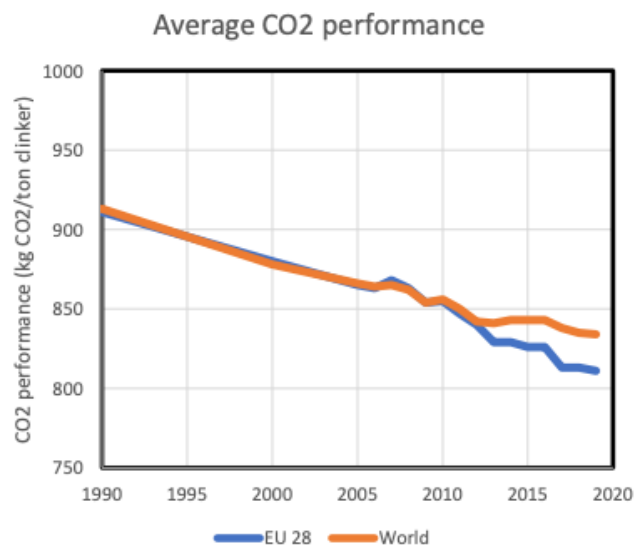


Figure 1: CO2 emissions in the EU & worldwide cement industry. Source: GCCA.

If EU exports are displaced by higher-emission alternatives, global emissions rise, frustrating the basic intent of EU climate policy. Moreover, even if EU exports are displaced by alternative that are *not* more emissions-intensive, merely shifting production and emissions to those jurisdictions with no or lower carbon pricing—a phenomenon known as carbon leakage—undermines the goals and political viability of EU climate policy. Literature, such as Branger and Quirion (2014),

supports this, noting that addressing exports in BCAs significantly reduces leakage rates and global emissions compared to import-only measures.

The status quo exacerbates these risks by failing to account for the industrial viability crisis now unfolding. Take fertilizers and petroleum refining as illustrative cases. Fertilizer production, heavily reliant on natural gas as both feedstock and energy source, has faced unprecedented cost pressures since the energy price surge triggered by geopolitical events in 2022. Plants operating below 60-70% capacity utilization—a percentage often cited as a threshold for economic viability—risk permanent closure, as fixed costs overwhelm revenues from reduced output.

Moreover, fertilizer production in the EU depends on foreign markets in the EU's off-season for their continued viability—EU farmers do not buy fertilizer in meaningful amounts in the winter—regardless of the percentage of domestic production that exports might constitute on an annual basis. Similarly, petroleum refining, though not yet explicitly under the CBAM, is structurally dependent on exports, since the refining of crude oil produces multiple final products in relatively fixed ratios, some of which are inevitably in excess of EU demand. In both cases, the absence of an export safeguard accelerates the tipping point where production becomes unprofitable, potentially leading to deindustrialization rather than decarbonization.

While decarbonization technologies and global carbon pricing may eventually narrow the competitiveness gap, the transition period is precisely when EU industries are most vulnerable. The Commission's 10-year timeline for phasing out free allocation, even if extended or backloaded, does not address the immediate leakage risk or the structural disadvantage in export markets. Without intervention, the EU risks sacrificing its industrial base and undermining its climate goals, as cleaner EU production is replaced by dirtier foreign output.

3. What to do? Actions

The preceding section makes a strong case that the existing provisions in the CBAM Regulation, which amount to no coverage for exported goods, are inadequate. Section 4 below surveys some of the proposals to remedy that problem—various methods by which exports might be covered under the CBAM.

For the sake of completeness, however, we should acknowledge that export coverage under CBAM is not the only policy option available or proposed for addressing the challenge of leakage and export competitiveness under full carbon pricing. Other options include a variety of ways to lower the cost burden of the ETS relative to the costs faced by foreign producers. These policies reduce the risk of carbon leakage—notably including export-related leakage—in two ways. First, by reducing the costs of low-carbon transition for covered installations, they reduce the cost advantage enjoyed by foreign firms that have not made such investments. Second, by helping to make an investment case for decarbonization, they enable firms to reduce their emissions intensity,

lowering their liability under the ETS and again reducing the cost advantage that might be enjoyed by foreign firms that do not face an equivalent carbon price.

Broad categories of policy options include:

1. Lowering the costs of industrial decarbonizing investment. One type of policy lowers the costs of the low-carbon investment that the ETS incentivizes for the various covered sectors. This might come in the form of lowering the cost of the technology itself, using grants, loans, or tax incentives to support research and innovation, or to support innovative low-carbon pilot projects. The EU's Clean Industrial Deal proposes to launch a Horizon Europe call of around €600 million under the 2026-2027 work programme for industry-focused projects that span the pipeline from research to deployment, "fostering synergies" between Horizon Europe's Innovation Fund and the Framework Programme for R&I (European Commission, 2025a:11)

Another route to lower costs of low-carbon investment is direct investment support. The Clean Industrial Deal proposes to create an Industrial Decarbonization Bank, ultimately resourced with €100 billion in funds mostly from the Innovation Fund, to support industrial emission reductions. It also proposes simplifying state aid procedures and lengthening planning horizons for member-state-level industrial decarbonization support (European Commission, 2025a:10).

2. Ensuring the supply of needed inputs at adequate scale and low cost. Some of the most viable decarbonization pathways for sectors such as steel and fertilizers involve the ability to purchase inputs of low-carbon hydrogen in quantities far beyond existing supplies (Tatarenko et al., 2023). And in most industrial sectors there is a need for affordable and low-carbon electricity at scale sufficient to allow, for example, a switch to electricity as a fuel for industrial heat (Vine and Henderson, 2021). Both the Draghi report (Draghi, 2025) and the Competitiveness Compass (European Commission, 2025b) highlight the need for affordability in energy supplies as a critical prerequisite to competitiveness, and this is the target of the Clean Industrial Deal's Action Plan for Affordable Energy (European Commission, 2025c). But ensuring the supply at scale of low-carbon inputs like electricity and hydrogen is also an issue.¹ These cost and availability issues, beyond the control of most industrial producers, are critical to making the investment case for decarbonization, and thereby to reducing risk of leakage in domestic and foreign markets by reducing producers' carbon cost liabilities.

3. Creating lead markets. A final policy option addresses the higher operating costs of decarbonized industrial production by creating lead markets for the products of those

¹ Doubts about the ability of the EU policy environment to produce green hydrogen inputs at scale and low cost was one factor behind the decision by ArcelorMittal to halt €1.7 billion in planned investments in low-carbon retrofits and investments despite having secured €850 million in French subsidies (Jamasmie, 2024).

sectors. This could be through preferential green government procurement,² or through carbon contracts for difference that focused on production costs (Sartor & Bataille, 2019). Again, the investment case for decarbonization will depend on some certainty about markets for low-carbon goods, and decarbonization helps lower the risk of leakage in both domestic and foreign markets by lowering carbon costs.

All these policy options share the aim of lowering the costs of decarbonized industrial production, such that producers subject to a full carbon price are less exposed to loss of market share and there is less risk of carbon leakage, both in domestic and global markets. While the EU's proposed efforts as part of the Clean Industrial Deal are not explicitly aimed at preventing leakage—they are justified in terms of competitiveness outcomes—the final result of success would be leakage prevention both domestically and abroad. The Australian Carbon Leakage Review did explicitly consider existing programmes of industrial support, such as the Future Made in Australia programme, as a means to lower the risk of export-related carbon leakage (Australian Government, 2024: 60).

Ultimately, however, while such efforts are critically important as ingredients for industrial competitiveness, they are not a substitute for more comprehensive policies to address the risk of export-related carbon leakage.

First, they are uneven in their impacts. While lowering the cost and ensuring availability of low-carbon electricity is broadly beneficial—though even that will preferentially benefit sectors such as aluminum with higher electricity use—policies such as R&I support will be concentrated on those sectors with more viable decarbonization pathways, and funding from the Industrial Decarbonization Bank will flow to those individual projects with the lowest marginal abatement costs. Smaller producers will be more challenged to access funds from programmes such as Horizon Europe and the Industrial Decarbonization Bank. Ultimately, some technologies and installations will benefit, but others will not, or will benefit much less.

Second, success in many of the most important areas of support is not guaranteed, but the costs of carbon are. The revision of the European electricity market design, for example, will be critical to the competitiveness of low-carbon EU industry, but the process will not be straightforward or quick. While the benefits of that effort are uncertain, the costs of carbon are assured.

Third, the scale of fiscal resources needed to successfully bridge the cost gap between clean EU CBAM-covered producers and global competitors using conventional production routes is well beyond the ability of the EU to muster. EU producers even in the best case scenario would not be fully covered for the incremental costs of low-carbon investment and higher operating expenses, and would still be paying the cost of residual carbon emissions under the EU ETS.

² The Draghi Report recommends public procurement procedures that make governments the “launch customer” for clean new production processes. (Part A, p. 52).

Fourth, the problem and the solutions are often working on different time-scales. The problem of export-related carbon leakage begins as soon as free allocation begins to phase out, in 2026 (though in the first years the effects will be minimal). Lowering the cost of technology and supporting learning by doing through innovation funding is a much longer prospect. Lowering the cost of decarbonizing investment will likewise be too long-term, especially for those producers who are in the early years of their capital investment cycles and are not willing to write off existing capital. Moreover, depending on the technology, retrofitting existing plants can take seven years or more from conception to completion. Similarly, it is by no means certain that ramping up the supply of inputs like low-carbon electricity and hydrogen can be done on timescales that allow firms to invest now based on the prospects of reduced carbon costs. That is, if those inputs are not available in the future, then the projected benefits of decarbonizing investment will also not be there; low-carbon hydrogen-ready steel mills, for example, will still face carbon cost liabilities because they will be forced to use high-carbon hydrogen.

The conclusion is that while policy efforts such as those assessed here are valuable and necessary to maintain the competitiveness of EU industrial producers in the face of full carbon pricing, they are not a substitute for a more comprehensive and targeted strategy to address the risk of carbon leakage and competitiveness impacts related to exports.

4. Export Adjustments Design Questions

4.1. Objectives of an Export Adjustment Mechanism

Designing a suitable mechanism to address export-related leakage under the CBAM demands clarity about what precisely is being sought. Four distinct yet interrelated objectives emerge from the ongoing discourse:

- First, an export adjustment should mitigate the risk of market share loss for European producers in global markets due to domestic carbon pricing policies. European industries currently face carbon prices under the EU ETS that their international competitors often do not, placing them at a competitive disadvantage (Marcu et al., 2022; Marcu et al., 2024).
- Second, any export adjustment must preserve incentives for European industries to decarbonize, aligning with overarching climate policy goals.
- Third, the mechanism must remain compatible with international trade law, specifically the WTO obligations under the Agreement on Subsidies and Countervailing Measures (ASCM).
- Fourth and finally, it should avoid excessive administrative complexity to ensure feasibility for both industry compliance and regulatory oversight, maintaining efficiency in implementation and operation.

4.2. Summary and Assessment of Proposals

A variety of policy proposals have been advanced to address export-related carbon leakage alongside the EU CBAM. These proposals can broadly be categorized into three groups: exemptions, rebates, or compensation for exporters implemented within the CBAM or the EU ETS; some form of support mechanism for exporters that operates separately from the CBAM and the EU ETS; and finally, an alternative carbon pricing mechanism that operates alongside the CBAM and the EU ETS. Each of these categories, and central proposals introduced under each category, are described below. A table at the end of this subsection summarizes the main features of each proposal and assesses its ability to advance the four objectives of a successful solution for export-related leakage as described in the previous subsection.

4.2.1. Exemptions, Rebates, or Compensation within the CBAM and EU ETS

Following the initial debate on the legislative proposal for the CBAM Regulation, the European Parliament proposed an amendment that would have inserted a specific provision extending the issuance of free allowances to exporters: “1b. In order to ensure a level playing field, ... the production in the Union of products listed in Annex I to this Regulation shall continue to receive free allocation, provided such products are produced for export to third countries without carbon pricing mechanisms similar to the EU ETS” (European Parliament, 2022). Several proposals from Member States, trade associations and civil society have since elaborated more detailed policy designs to confer direct compensation or rebates for carbon costs incurred on exported products.

Importantly, the French Government (France, 2022) introduced a non-paper into the policy debate in early 2022 that proposed a system of partial rebates to avoid overcompensating exporters and negating the environmental benefits of the EU ETS and CBAM for affected goods, as that could compromise WTO compatibility and trigger a challenge under the WTO’s Agreement on Subsidies and Countervailing Measures (ASCM). While unclear on the exact methodology, it explored basing the partial reduction of the rebate on either a fixed percentage or product-based benchmarks derived from EU ETS methodologies in order to improve alignment with WTO obligations. Such a partial rebate of the carbon costs faced by exporters was proposed in order to preserve incentives for decarbonization by rewarding exporters who achieve emissions intensities of production that are below established benchmarks, and by failing to compensate for carbon costs incurred on emissions exceeding that benchmark.

A trade association for manufacturing industries, Aegis Europe, issued a proposal in 2021 that contributed a detailed legal analysis to this debate, highlighting different rebate structures and their respective WTO implications (Jouanjean et al., 2021). It emphasized that structuring export rebates as regulatory adjustments rather than explicit financial subsidies greatly enhanced legal defensibility. Specifically, it argued that framing the EU ETS as a regulatory scheme that internalizes environmental costs—rather than as a purely fiscal measure—could reduce the risk of

violating WTO subsidy prohibitions. Similar to the French proposal, the Aegis Europe proposal further suggested that non-monetary adjustments, such as free allowances allocated according to standardized emission benchmarks rather than export volumes or actually incurred carbon costs, would likely offer the strongest WTO compatibility. Nonetheless, it acknowledged residual legal uncertainty, given the lack of definitive WTO case law concerning ETS-related export rebates.

A sector-specific trade association, FuelsEurope, also recommended a rebate-based adjustment mechanism, and similarly recommended focusing the proposal on the carbon costs associated explicitly with the top-performing decile (10%) of EU producers in terms of emissions efficiency (FuelsEurope, 2022). By benchmarking rebates against Europe's most efficient producers—an approach it describes as “inspired by” the benchmark-based allocation process under the EU ETS—the FuelsEurope proposal also sought to ensure that exporters remain incentivized to continuously improve emissions intensity. The exact process of determining the 10% of best performing EU installations is not explained in detail, however; to the extent that it could draw on existing EU ETS benchmarks, it would avoid having to precisely track performance metrics in order to accurately benchmark exporters against top-tier producers. Otherwise, the administrative complexity would be significant.

Another sectoral industry association, European Aluminium, advocated incorporating export adjustments directly into the CBAM regulation itself with a proposal presented in late 2021 (European Aluminium, 2021). Its approach sought to avoid overcompensation by ensuring adjustments reflect actual ETS-related carbon costs borne by European exporters. By calibrating the rebates directly to ETS compliance costs through a “mirroring CBAM declaration for exports”, it would ensure automatic reimbursement for ETS costs upon export. Unlike the previously discussed proposals, it would not have curtailed compensation based on an emissions intensity benchmark, weakening the incentive for deeper decarbonization efforts and thus reducing financial signals that drive long-term emissions reductions.

In several position papers starting in 2021, the European Cement Association (Cembureau) has called for the implementation of solutions to export-related leakage, suggesting a “CO₂ charge exemption for EU exporters to third countries, if the country in question is not covered by an equivalent carbon pricing mechanism” (Cembureau, 2021a) and for its design proposing to explore “the so-called destination principle which requires that operators exporting to a third country should be treated the same way as the domestic operators in that country” (Cembureau 2021b). A supporting legal opinion concluded that such a system could be designed in a manner consistent with WTO rules (Baetens, 2021).

Finally, a think tank, Agora Energiewende, recommended continued—but gradually declining—free allocation of EU ETS allowances to exporters, complemented by state aid for all producers of goods covered by the CBAM (Sartor et al., 2022). Like some of the preceding proposals, this hybrid approach sought to strike a balance between directly compensating exporters for carbon

price disparities and maintaining robust emissions reduction incentives, in this case by relying on benchmarks for free allocation and defining sectoral decarbonization milestones.

Collectively, proposals in this category directly address market-share preservation (Objective 1) by mitigating carbon cost disparities in export markets. Nevertheless, their implications for decarbonization incentives differ significantly depending on their specific design elements. Explicit financial rebates present the highest legal risks under WTO law, while benchmark-linked, non-monetary adjustments such as those advanced by Aegis Europe and Agora Energiewende, appear relatively safer, but require careful implementation.

4.2.2. External Support Mechanisms

Other approaches seek to avoid direct WTO subsidy challenges by using external funding mechanisms rather than direct carbon cost rebates, reflecting the indirect and complementary approach described above in Section 3. Jakob et al. (2025), for instance, propose financial support explicitly targeted at innovation by sectors with a high share of exports. The support would be designed to incentivize and finance innovations reducing production emissions, indirectly alleviating carbon cost pressures faced by exporters. This approach seeks to strategically circumvent WTO subsidy prohibitions by not directly linking financial support to export performance, but instead basing it on generalized innovation criteria. The strength of this proposal would lie in fostering long-term technological advancement and emissions reductions, though its indirect nature may limit immediate effectiveness in highly competitive export markets. Additionally, while it could rely on existing financial disbursement mechanisms such as the Innovation Fund, it would incur fiscal costs which, as the authors estimate, would be manageable, but still absorb a significant share of the revenue collected with the CBAM.

Similarly, Sgaravatti (2024) emphasizes targeted innovation funding and operational grants explicitly designed to prioritize exporting sectors within broader EU industrial policy frameworks. Sgaravatti's method entails competitive bidding processes, whereby exporters would receive funding based on technological advancements and emissions reduction projects. While minimizing WTO-related legal risks by carefully avoiding explicit export contingency, this indirect approach may likewise only gradually and selectively mitigate immediate carbon-cost disadvantages for exporters. Thus, it offers a safer legal pathway, but less immediate competitive relief compared to direct ETS- or CBAM-linked compensation mechanisms.

4.2.3. Alternative Instruments

A third category of approaches proposes entirely new carbon pricing regimes to address export-related leakage without the direct WTO subsidy implications associated with rebates. Neuhoﬀ et al. (2025) build on a number of earlier proposals to suggest a standardized product-based carbon

charge termed a “climate contribution.” This charge would uniformly apply to carbon-intensive basic materials, both domestically produced and imported, with explicitly permissible export rebates consistent with WTO rules. Such a design would ensure consistent carbon-cost pass-through along product value chains and reduce incentives for resource shuffling. Despite its clear WTO compatibility and strong environmental logic, however, the practical complexity of establishing detailed product-specific benchmarks for the standardized charge constitutes a notable administrative hurdle.

Finally, a proposal presented by the law firm Freshfields Bruckhaus Deringer in early 2022 (Bartels et al., 2022) would have emulated aspects of the “climate contribution” by creating an entirely novel regime designed to exempt EU exporters from additional carbon costs while maintaining strong WTO compliance. Their mechanism involved retaining the system of free ETS allowances for domestic producers, coupled with the simultaneous introduction of an obligation—limited to domestically consumed goods—to surrender additional CBAM certificates linked to embedded carbon emissions. Exported goods would remain exempt from this additional CBAM obligation. This approach maintains carbon-cost equivalence between EU-produced and imported products consumed within the EU market, preserving competitiveness abroad by exempting exported products from additional obligations and clearly distinguishing between domestic consumption and export flows. The strength of this proposal lies in explicitly avoiding the legal pitfalls associated with direct rebates, instead structuring the measure as an integrated regulatory scheme rather than as financial assistance contingent on exports. However, operationalizing the coexistence of two differentiated certificate systems (ETS allowances and CBAM certificates) would also present significant additional administrative complexity, at a time when the EU is actively seeking to streamline and simplify reporting obligations and bureaucratic burdens.

Category		Export Rebates or Compensation					Other Financial Support		Alternative Instruments	
Proposal	France (2022)	Aegis (2021)	Cembureau (2021)	European Aluminium (2021)	FuelsEurope (2022)	Sartor et al. (2022)	Jakob et al. (2024)	Sgaravatti (2024)	Neuhoff et al. (2025)	Freshfields (2022)
Description	Partial rebate system that limits rebates to avoid overcompensation	EU ETS benchmark-based non-monetary adjustment in the form of free allocation for exports	CO ₂ charge exemption for EU exporters to third countries, if the country in question is not covered by an equivalent carbon pricing mechanism	Proposal affording reimbursement of carbon costs under the EU ETS through a “mirror system” of CBAM export declarations	Adjustment mechanism with free allocation based on the costs faced by the 10 percent most efficient EU producers	Partial rebates based on established ETS benchmarks, continuing partial free allocation for exports, complemented by state aid for all producers	Subsidies for innovation and technology adoption targeted specifically at exporters, indirectly reducing compliance costs and carbon intensity	Competitive funding and subsidies prioritizing exporters to indirectly enhance their global competitiveness without directly linking to export performance	Standardized carbon charge on basic materials, allowing WTO-compatible rebates for exports and extending coverage along the product value chain	Maintaining the free allowances mechanism for EU industries, complemented by CBAM obligations exclusively for products consumed domestically
Avoiding Market Share Loss	High	High	High	High	High	High	Moderate (indirect)	Moderate	Moderate	High
Incentives to Decarbonize	Medium-High	Medium-High	Medium	Medium-High	Medium-High	Medium-High	High	High	High	Medium
WTO Compatibility	Medium	Medium	Low-Medium	Low	Medium	Medium	Medium-High	Medium-High	High	High
Administrative Feasibility	Low-Medium	Medium	Medium-high	Medium	Medium	Medium	High	High	Low	Low
Overall Assessment	Balance of leakage protection, legal compliance, and clear decarbonization incentives, with moderate complexity	Legally cautious approach, balancing WTO compliance and export competitiveness, though not eliminating complexity	Design of CO ₂ exemption not elaborated, thus environmental incentive unclear; reliance on destination principle may increase administrative burden	Strong direct protection for exporters, but potential WTO compliance risks, and some administrative complexity	Balances leakage protection with incentives to decarbonize and WTO legality; administrative feasibility challenges persist	Effective leakage protection with balanced decarbonization incentives, moderate legal uncertainties remain	Indirect approach with reduced legal risk and strong decarbonization benefits, but only moderate direct leakage protection	Indirect support avoids legal challenges, balanced administrative complexity, but possibly insufficient for highly competitive export markets	Approach addresses broad supply-chain leakage risks and has strong WTO compliance prospects, but incurs high complexity in implementation	Strong export competitiveness protection with lower legal risk, but potentially weaker decarbonization signals and additional layer of administrative complexity

Table 1: Assessment of proposals

4.3. Recommendation

Given the complexity of balancing economic, environmental, legal, and administrative considerations, this report recommends pursuing a carefully designed partial rebate system, closely aligning with the solution already proposed by ERCST in March 2022 (Marcu et al., 2022). This recommendation to create a system of “Incentive-aligned Export Adjustment Certificates” would entail awarding non-fungible—that is, non-transferable and thus not tradeable or monetizable—export adjustment certificates, calculated on the basis of existing EU ETS product benchmarks, that would be exchangeable for EU ETS allowances. Doing so addresses critical shortcomings in other proposals by offering robust leakage protection while using benchmark-based partial issuance of non-fungible certificates to retain a decarbonization incentive, avoid overcompensation, and minimize the risk that the solution to export-related leakage is considered a financial contribution benefitting exporters. The following text box provides a detailed description of the ERCST proposal.

Incentive-aligned Export Adjustment Certificates

- European producers of goods covered by the CBAM are required to annually declare the embodied emissions and volumes of covered goods exported to third countries during the preceding calendar year.
- Based on the existing product benchmarks used for free allocation of EUAs, these producers are issued non-tradable and non-transferable export adjustment certificates corresponding to the average emissions intensity of the 10% least carbon-intensive producers in the EU, or – for those producers meeting or exceeding the benchmark level – the actual emissions embodied in exported goods, prorated to reflect the gradually declining share of free allocation obtained by the producers.
- For the next compliance period, producers holding export adjustment certificates can exchange these for EUAs used towards compliance with their obligation to surrender EUAs for emissions from covered activities. The EUA will have to come from under the cap to ensure that the cap is not compromised.
- By providing an export adjustment based on product benchmarks, this approach retains a dynamic incentive for exporters to reduce the carbon intensity of production, avoiding an incentive to shift activities from production of goods for domestic consumption to goods destined for export.
- Also, by providing only partial remission of emission costs, a benchmark-based approach lowers the likelihood of overcompensating exported products relative to the compliance burden faced by products consumed domestically. Similarly, by being operationalized through export adjustment certificates rather than a financial reimbursement, it avoids the need to determine a process and timeline to establish the monetary value of EUAs (such as the weekly average closing price), which could introduce arbitrariness and again contribute to overcompensation.
- Finally, unlike EUAs or a financial reimbursement, export adjustment certificates do not constitute a direct transfer of funds or of tradable goods or services. Instead, they provide a partial remission of the costs borne by exported goods to comply with obligations under the EU ETS, and may thus be less likely to be considered a financial contribution.

Box 1: Incentive-aligned Export Adjustment



Overall, thus, this recommendation balances environmental effectiveness, administrative feasibility, legal robustness, and political viability, enabling the EU to maintain its climate ambition without sacrificing industrial competitiveness. Specifically, partial rebates based on benchmarks strike an effective compromise, maintaining incentives for emissions reductions, addressing the primary concerns that exports may otherwise shift towards more emissions-intensive production overseas. Relying on pre-established benchmarks means that administrative complexity remains manageable, closely mirroring existing structures under the EU ETS, while also reducing legal vulnerabilities under the WTO's subsidy disciplines. Crucially, by explicitly benchmarking rebates to the performance of the cleanest producers, the recommended approach continues to drive industrial innovation towards deeper decarbonization.

Furthermore, the ERCST proposal sets out a transparent and iterative process of regulatory evaluation and adjustment, providing flexibility to respond dynamically to both the evolving landscape of global climate policy and changing competitive pressures. Drawing on the proposals from Agora Energiewende (Sartor et al., 2022) and Jakob et al. (2025), the proposal could be further enhanced by including a clear timeline of decarbonization milestones and conditions for the continued award of export adjustment certificates or, if an assessment at defined periods in time determines the continued existence of export-related leakage risks, a potential suspension in the phase-out of free allocation, as originally envisioned by the European Parliament in its proposed amendments. Additionally, as already explained in Section 3, scaled-up financial support under existing or newly created funding mechanisms—not least in an EU faced with new competitiveness and security challenges in its immediate neighborhood and in its relationship with historical allies—can further help reduce export-related leakage risks as the carbon cost facing exporters declines in line with sector-wide emissions.

Ultimately, this approach reinforces the EU's global leadership on climate mitigation, enhancing the credibility of EU climate policy internationally, thereby potentially incentivizing similar carbon pricing efforts elsewhere, while effectively protecting European industry in export markets.

5. International Trade Law: An Impediment?

Legal uncertainties, particularly those concerning compliance with international trade law and notably with rules administered by the WTO, have significantly constrained the policy debate about export adjustments under the EU CBAM. Key legal concerns focus primarily on compatibility with two major WTO agreements: the General Agreement on Tariffs and Trade (GATT) and, crucially, the Agreement on Subsidies and Countervailing Measures (ASCM). Under WTO law, any measures providing financial benefits contingent upon export performance are classified as prohibited subsidies (Mehling & Jakob, 2024). Specifically, the ASCM defines a subsidy as a financial contribution by a government that confers a benefit, including different



variations such as direct financial transfers or forgone government revenue. Since an export rebate or exemption mechanism within the CBAM or the EU ETS would arguably represent foregone revenue—given that carbon allowances under the EU ETS could otherwise be auctioned—this has raised legitimate concerns over the WTO compatibility of any export solutions. Furthermore, while there is scope within WTO rules for the rebate of an indirect tax at the point of export, ambiguity around whether EU ETS allowances could be construed as a tax under WTO law complicates any attempt to justify export rebates as permissible border adjustments. Despite compelling legal arguments presented to mitigate these concerns, the lack of precedent in WTO dispute settlement leaves substantial residual uncertainty regarding how a WTO panel would adjudicate such cases.

Such legal uncertainties have notably constrained policy deliberations within the European Union. The primary competence for evaluating the WTO compatibility of policy measures resides exclusively with the European Commission’s legal services, effectively limiting the capacity of individual Member States to drive this debate. France, for example, has consistently advocated for robust consideration of export solutions within the EU CBAM context, but has been unable to independently advance the policy discussion due to the sole EU-level competence on trade matters. Consequently, political momentum behind comprehensive export adjustments has remained constrained by these institutional and legal constraints, despite persistent industrial competitiveness concerns.

However, it is important to contextualize these legal considerations within the dramatically evolving geopolitical and trade landscape. While the EU remains fundamentally committed to the rules-based international order, including the multilateral trading system overseen by the WTO, this commitment is increasingly challenged by realities of dysfunction within multilateral trade governance. Prominent actors like the United States have set a troubling precedent by openly disregarding WTO rules when politically expedient, exemplified notably through expansive subsidies with inadmissible local content requirements (LCRs) under the Inflation Reduction Act (IRA) and, more recently, deployment of a range of punitive tariffs based on spurious national security reasoning to advance unrelated political priorities. Simultaneously, strategic EU trade partners, particularly China, selectively exploit the benefits of WTO membership while maintaining opaque regulatory barriers that restrict market access for European industries. These developments have created considerable strategic and competitive pressures, intensifying calls within Europe for a pragmatic reassessment of a highly risk-averse approach to WTO legal obligations—particularly as the EU confronts existential economic and security challenges.

In light of these developments, the call for political courage previously articulated (Marcu et al., 2022) gains renewed significance. This recommendation does not imply disregard for the multilateral trading system’s foundational norms or its critical role in providing stability and predictability in global trade relations. Rather, it acknowledges the exceptional circumstances confronting the EU, suggesting a strategic recalibration of how vigorously the EU should prioritize



minimizing risk of potential challenges before the WTO, especially when competing nations strategically deviate from established rules. Already in its current form, the CBAM may become the subject of a WTO dispute, with different trade partners of the EU rumored to be considering judicial steps—there is, thus, no perfectly risk-free path forward for the CBAM.

In reaffirming our prior recommendation, we emphasize that addressing export-related leakage is imperative not only to uphold industrial competitiveness but also to preserve the political feasibility of ambitious EU climate policies (Marcu et al., 2024). Given the changing geopolitical and competitive landscape, acting decisively to protect EU interests through carefully designed export adjustments might, paradoxically, require less courage today than previously assumed. Precisely because other major economic powers are themselves increasingly navigating or openly challenging existing multilateral trade constraints, the EU finds itself at a strategic inflection point where decisive action in support of its exporters could now encounter diminished resistance or retaliatory responses. Provided that such mechanisms are designed with careful attention to avoid overcompensation and retain decarbonization incentives, the EU should muster confidence that it can navigate potential WTO challenges. Ultimately, the benefits to climate policy credibility and industrial competitiveness likely outweigh residual legal uncertainties, positioning decisive action on exports as a justified and strategically sound policy choice for the European Union at this critical juncture.

6. Conclusions

When the initial discussion on the architecture and governance of CBAM took place, exports were deemed to be important enough to warrant a vigorous debate, with different provisions put forward by the EU institutions. The “no export provision” view carried the day at that time fundamentally on the argument that export coverage would run afoul of the WTO provisions, one of the conditions that the European Commission presented as being a necessary condition for the CBAM.

Since then, some things have remained the same, some things have changed. The WTO world has shifted somewhat and while many of us feel strongly that staying aligned with WTO provisions is important, the WTO seems to have been less visible in the trade disputes that have emerged lately.

The risk of running afoul of WTO provisions always existed for the CBAM and the percentage of that risk continues to be unknown, but it is certainly not zero. It will stay like this until tested in WTO. Introducing new provisions, such as for exports only modifies that percentage, but in no way makes it a certainty that it will not be compatible with WTO. Any statement that claims such certainty is wrong and needs to be seen as only be a person’s judgment and opinion, nothing more until tested.



While exports were important, as ERCST outlined in an earlier paper, and as also outlined in this paper, exports have only increased in importance for the EU since then. The Draghi and Letta reports clearly emphasize the competitive issues that the EU is facing and not including exports in CBAM only adds to that pressure.

Alternative solutions to deal with exports in the presence of CBAM have been proposed and are examined in this paper. They could contribute to alleviate the problem, but they are by no means sufficient. Several reasons have been outlined why these solutions are not ideal, but the one that we would like to highlight is timing – this is an urgent measure and not getting CBAM right is not a luxury that we can afford. We had the time to address and correct the EU ETS until it reached its current architecture and governance, we don't have the same time luxury for CBAM. In addition, these other solutions will in time contribute, but this decade is critical for the transition of EU industry and we need an effective mechanism now.

Finally, ERCST is a think tank and not a policy making institution. As such, the solution we propose may be examined, we hope, but may not be adopted by policy makers. This leads us to the closing argument for this paper – having no provision that is effective and immediately addresses the problems of exports in CBAM is not an acceptable outcome.

There is a clear option facing policy makers – introduce an export provision in CBAM and take some level of risk with when it comes to WTO alignment--and we are convinced that a provision can be crafted to meet that test – or have no export provision, and gamble with the future of industry in the EU.



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