POLICY BRIEF

Carbon Border Adjustment Mechanism for resilient and sustainable EU value chains?

TWIN SEEDS

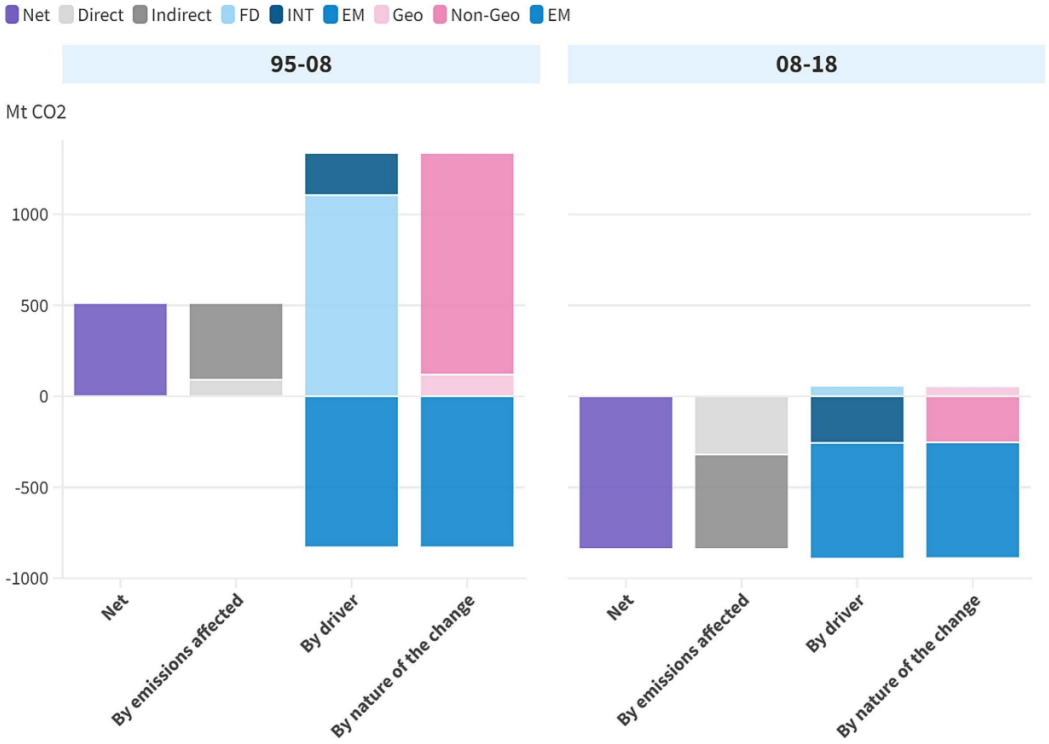
Funded by the European Union

The **EU's Carbon Border Adjustment Mechanism (CBAM)** is coming into effect in 2026. It will apply new charges to carbon intensive goods based on the carbon emitted during their production process. By raising prices for carbon intensive producers, it will restructure the global value chains (GVCs) supplying the EU market, but it will also have wider internal and external effects. TWINSEEDS research sheds light on these effects, while indicating **some accompanying policy actions** that can help to maximise the positive impacts of CBAM while avoiding unintended negative consequences.

RESEACH SUPPORTS THE LOGIC OF CBAM – BUT ADJUSTMENTS ARE NEEDED

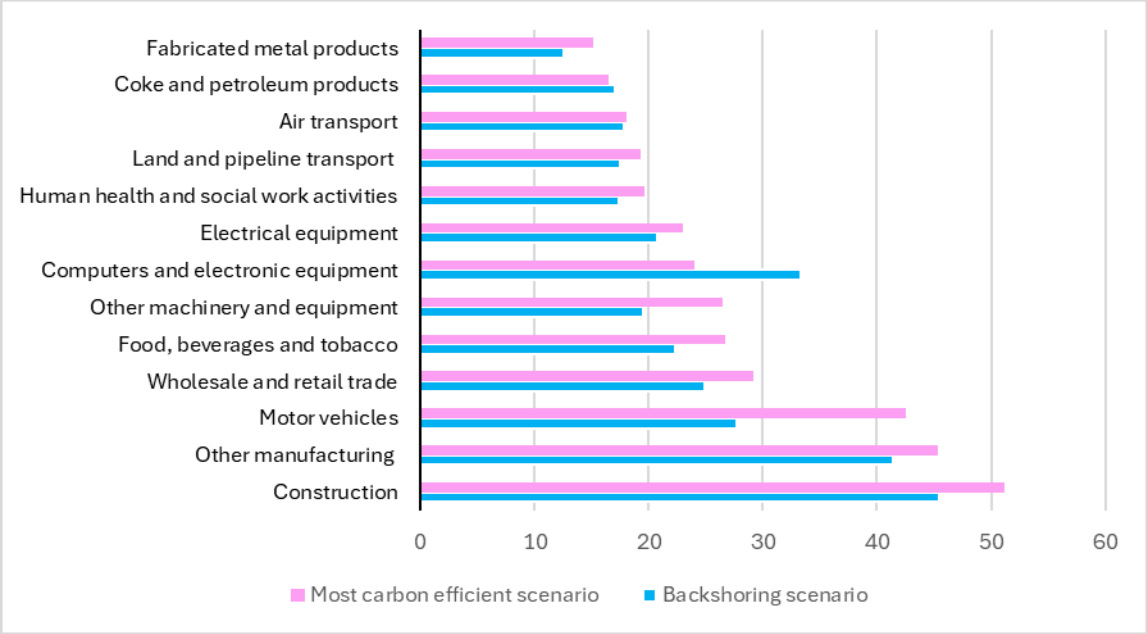
Research **confirms that recent reconfigurations of EU Global value chains (GVCs)** have had major impacts on EU carbon emissions (Figure 1). Between 1995 and 2018 offshoring increased emissions. Most of this increase occurred in the period up to 2008 (+23%). Since then, the EU's carbon footprint has decreased by 21%, but offshoring continued to result in the growth of emissions by 6%. As indicated in the graph, in both periods, indirect emissions were the main contributor to the changes. This underlines the need for **CBAM to expand its coverage to intermediates**, as well as final goods, which other research highlights is a long standing request from some EU industries.

Figure 1: Changes in the EU's carbon footprint by source (direct/indirect), driver (intermediates, final demand or emission intensities) and by nature of change (geographical shift of suppliers or other).



Research also confirms that CBAM has great potential to reduce EU emissions. Calculations indicate that if it achieves its aim of backshoring and/or encouraging shifts to low carbon sources (greenshoring) it could **reduce the EU's carbon emissions by between 14% to 25%**. As shown in the Figure 2, the effect varies across sectors, with the greatest impacts seen in construction, electronics, transport and other manufacturing. In most cases backshoring to the EU is almost as efficient as greenshoring. The largest difference is seen in the transport sector, where greenshoring would reduce carbon emissions by 50% more than backshoring. Detailed research on key strategic sectors shows that reconfiguring **iron and steel** supply chains alone could reduce the EU's footprint by around **13 megatons of CO_2** ($MtCO_2$), while for **electric motors, batteries, and chips and circuits**, the reductions could be around **4** $MtCO_2$. In this case, the impacts vary little between backshoring to the EU, nearshoring or both.

Figure 2: Emissions reductions in key sectors under reshoring and 'greenshoring' scenarios.



Overall, our forecasts suggest that CBAM will result in **a modest 0.01%. reduction in CO_2 global emissions.** This is the result of shifts in demand toward the EU's comparatively cleaner producers and channelling tariff revenues towards mitigation initiatives within the EU. Emissions in non-EU countries fall by 0.14% (especially in countries whose exports are very carbon intensive such as Ukraine, Belarus and Turkey), leading to an **overall decline in carbon emissions**.

ADDRESSING UNDESIRABLE OR UNINTENDED EFFECTS OF CBAM

CBAM poses some risks. Firstly, GVC reconfigurations may **increase emissions within the EU**. Past shifts in EU offshoring and reshoring, especially in mid- and low-tech sectors, led to significant increases in emissions in Eastern member states. CBAM linked reshoring needs to be combined with decarbonizing Eastern and Southern Europe, if emissions are to be reduced significantly. This means financial **support for renewable energy investments in key reshoring regions** should be a policy priority.

In addition, there is a risk that the global reorientation of trade will undermine the effectiveness of EU regulations. Our analysis indicates that if the EU's shift to low carbon imports results in other importers shifting to dirtier suppliers - so called 'resource shuffling' - **CBAM's impact could be negligible or even negative** (a 0.5% increase in global emissions). The EU therefore needs to remain vigilant about the multilevel restructuring of GVCs globally to ensure that positive spillovers actually occur. If the measure is to have global impacts, it must be **accompanied by cooperation and dialogue with key actors** in the EU's strategic GVCs.

PROJECT IDENTITY

PROJECT NAME

Towards a World Integrated and Socio-economically Balanced European Economic Development Scenario (TWIN SEEDS).

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LINK TO THE RESEARCH AND DETAILED RESULTS

https://twinseeds.eu/wp-content/uploads/2025/09/New-Normal-Scenarios-Twin-Seeds-WP6.pdf

FOR MORE INFORMATION ON THIS BRIEF

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