CBAM impact on US trade: an analysis

Research note – September 2025

This note summarises the results of Sandbag's modelling of the Carbon Border Adjustment Mechanism (CBAM) applied to imports from the United States into the European Union.

All simulations are based on 2023 trade volumes, assuming these volumes will remain constant over time. However, as the CBAM will ramp up gradually between 2026 and 2034, the effects calculated here assume a full implementation, as planned from 2034 onwards. Figures are based on Sandbag's in-house simulations[1] using data from the European Commission, industry associations, academic studies and international databases made with support from the Konrad Adenauer Foundation.

Key findings

- US companies would face just €351 million in annual CBAM fees on exports to the EU, representing only 0.14% of the value of US goods exported to Europe in 2023[2]
- The impact is likely even lower, with the net cost to US companies expected to drop to €160 million, or 0.07%, when incorporating the expected price effects that would also benefit US exporters.

One CBAM, many options

The impact of the CBAM will depend on assumptions made over the policy's coverage (products, emissions) and how the EU's trade partners react. This section describes the set of assumptions used, regarding scope and strategies adopted in reaction to the CBAM, that led to the results that are presented in the next section.

[1] Source: Sandbag, based on data from the European Commission, industry associations, academic studies, and international databases.

[2] This calculation is based on a business-as-usual scenario, current scope.

Scenarios

Predicting the CBAM's impact requires assumptions about the way trade partners will adapt or respond to it. We have considered three scenarios of such reactions described below: *business-as-usual*, *resource shuffling* and *introduction of carbon pricing*.

- **Business-as-usual:** The US does not introduce carbon pricing to offset. No strategic adjustment by US hence the emissions intensity of goods sold to Europe remains constant.
- **Resource shuffling:** US exporters strategically redirect their cleanest production to the EU market, lowering their declared emission intensity. While this reduces their CBAM costs, it does *not* reduce global emissions and may even undermine the CBAM's climate benefit.
    - Steel goods made using electric arc furnaces (EAF) and higher contents of scrap.
    - Aluminium goods made of higher contents of remelted scrap.
    - Cement products with lower clinker content, and cement rather than clinker.
    - Goods made using higher amounts of green electricity.
- **Introduction of Carbon Pricing**: US implements domestic carbon pricing at 25%, 50% or 75% of the price of EU emission allowances (EUA).

Scope

Given the many possible evolutions of the CBAM, we created five scopes of emissions, including a status quo with the current scope, plus four possible extensions: to upstream products of the ones covered by the current scope (precursors); to a selection of downstream products; to indirect emissions (from electricity use); and to new products.

Current Scope

The **current scope** corresponds to the coverage described in the CBAM Regulation. The goods covered by the CBAM are summarised in Table 1. It should be noted that this does not take into account the exemptions applicable to goods intended for military purposes, as well as those decided under the 'Omnibus' package voted by Parliament on 10 September. The Omnibus amendment will set a minimum threshold of 50 tonnes of net mass of imported CBAM goods per year and per importer, thereby exempting 80% of businesses from the CBAM, according to the Commission.

Table 1: goods currently covered by the CBAM

Product category	Products
Aluminium	Unwrought aluminium, aluminium powders and flakes, and all kinds of aluminium products (including bars, rods, wires, plates, sheets, foils, tubes and pipes, tube and pipe fittings, structures, reservoirs, tanks, casks, drums, cans, boxes, other containers, and cables)
Chemicals	Hydrogen
Cement	Cement clinkers, white Portland cements, other Portland cements, aluminous cements, other hydraulic cements, other kaolinic clays
Electricity	Electrical energy
Fertilisers	Nitric acid, sulphonitric acids, urea, ammonia (anhydrous or in aqueous solutions), nitrates of potassium, mixed fertilisers (nitrogenous mineral and chemical fertilisers, and other fertilisers containing nitrogen, phosphorus and/or potassium)
Iron and Steel	Agglomerated iron ores and concentrates (other than roasted iron pyrites), pig iron, ferrous products obtained by DRI and other spongy ferrous products, crude steel, and all kinds of iron and steel products* (including bars, rods, rails, wires, tubes, pipes, sheets and other flat-rolled products, reservoirs, tanks, casks, drums, cans, boxes, containers, as well as screws, bolts, nuts, hooks, and rivets) – *except certain ferro-alloys (only ferro-manganese, ferro-chromium, and ferro-nickel are covered), and ferrous waste and scrap (including remelting scrap ingots and steel)

"Direct" emissions (in the sense of the CBAM) refer to "scope 1" emissions, i.e. that are released into the atmosphere from on-site activities. Indirect emissions are GHG emissions that occur off-site **due to the consumption of electricity**, often called "scope 2". Heating and cooling provided from external sources are considered as direct emissions.

Only imports of cement, fertilisers and agglomerated ore must pay for both direct and indirect emissions, whereas for all other CBAM goods, the levy will only apply to direct emissions.

Impact on US imports

Fees, revenues and net costs

For importers, carbon costs are the cost of acquiring CBAM certificates. The price of each CBAM certificate is the ETS allowance price (EUA), assumed to be **€80**. The number of necessary certificates corresponds to the embedded emissions of the goods as calculated by the CBAM methodology.

As illustrated in Figure 1, CBAM fees to be paid for US imports would amount to €351m annually under the CBAM's current scope in a 'business-as-usual' scenario. This would rise to €1211m if the CBAM is extended to all four types of products and emissions simulated

(upstream, downstream, indirect emissions and new sectors, described in the Annex). By comparison, US imports of goods into the EU in 2023 were €242 billion[3], meaning that CBAM fees would represent around **0.14%** of total trade under the current scope, and **0.19%** under the extended scope.

CBAM fees would only be marginally reduced in a "resource shuffling" scenario, due to the already low emission intensity of flat steel products made in the US. As a result, US manufacturers would not reduce CBAM duties much further by shuffling inputs around: €347m in the current scope as opposed to €1195m with full extension.

In a scenario where US manufacturers paid for a €40 carbon price (equal to 50% of the EUA price) in their own country, CBAM fees would be discounted by that same amount, reducing CBAM fees applicable to US imports down to €175m. While the likelihood of introducing domestic carbon pricing in the US before the 2030s is low, this scenario illustrates the potential further reduction in CBAM costs for US exporters.

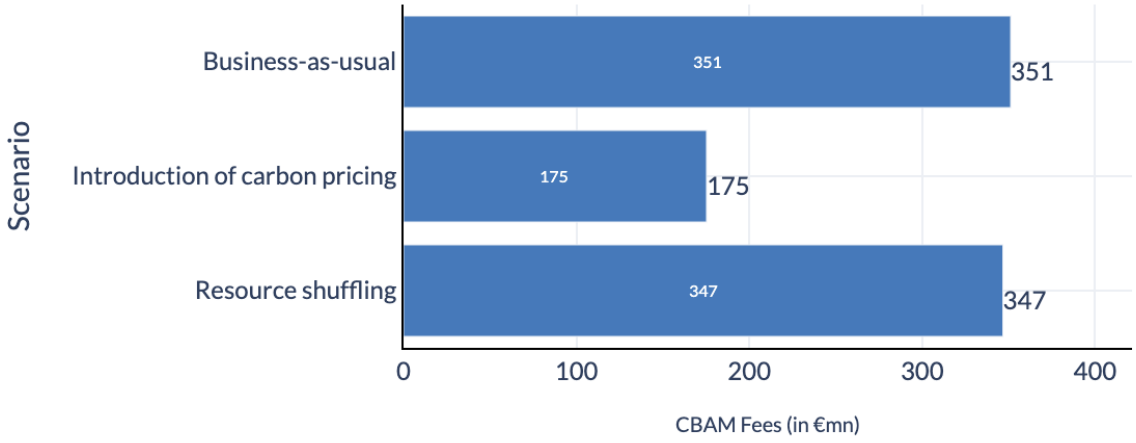

Figure 1. CBAM fees paid for US imports in all scenarios (in €mn)[4]

As free allowances are phased out in the EU ETS, EU-located factories will bear increasing carbon costs under the EU ETS, which they will aim to pass through to their clients. The proportion of those costs that firms can pass on to their customers (the ***cost pass-through rate***)

[3] Eurostat's Comext database

[4] See in Annex: Scope extension

depends on demand elasticity[5] and the CBAM's effectiveness at reflecting EU carbon prices. Based on previous research on demand elasticity[6], and on the existence of provisions against circumvention in the CBAM regulation, we assumed a pass-through rate of 80%. In other words, CBAM-covered goods will be sold in the EU at a premium (e.g. a **price increase**) equal to 80% of average ETS costs.

Net costs represent CBAM fees minus revenues expected from increased selling prices. Table 2 shows that CBAM fees are concentrated in fertilisers and iron & steel, reflecting their higher export volumes to the EU. Aluminium and cement contribute relatively little to total fees due to smaller trade volumes. The negative net cost for aluminium suggests that some sectors could actually benefit from the scheme.

Table 2. CBAM fees on US imports by sector, business-as-usual scenario, current scope

	CBAM Fees (in €mn)	CBAM net cost (in €mn)
Aluminium	6	-3
Cement	0	0
Fertilisers	130	58
Iron and Steel	215	105
TOTAL	**351**	**160**

Impacts can also differ depending on the response of trade partners to the CBAM. As shown in Figure 2 in the current scope, in the 'business-as-usual" scenario, net costs amount to €160mn, equivalent to 0.07% of the value of all US goods imported into the EU in 2023. In the "resource shuffling" scenario, net costs are nearly unchanged at €156mn, while in the "carbon pricing' scenario they turn negative (€-16mn).

[5] Demand elasticity refers to the degree to which the quantity demanded of a good changes when its price changes. A high elasticity means demand is very sensitive to price changes, while a low elasticity means demand is relatively insensitive.

[6] Sandbag (2023) *A Scrap Game: impacts of the EU Carbon Border Adjustment Mechanism*

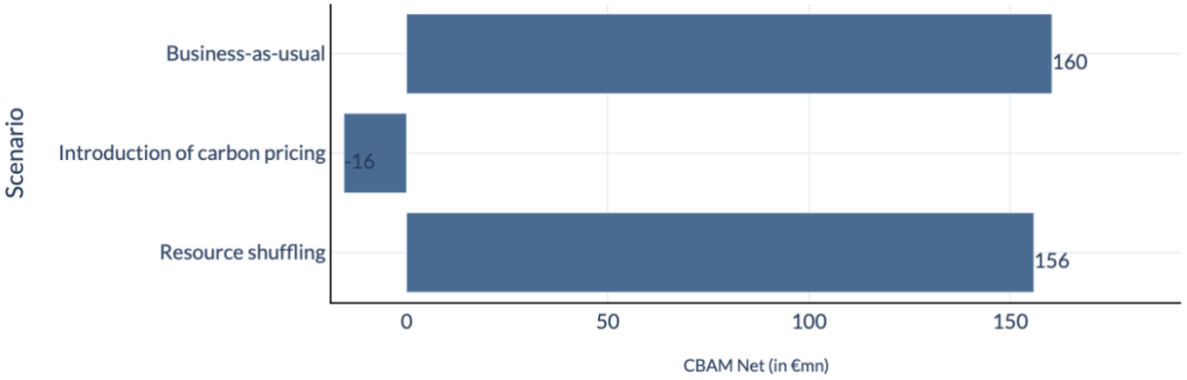

Figure 2. Net CBAM costs for US imports, in the current scope (in €mn). The carbon pricing scenario is with a €40 carbon price (50% of the EUA price)

Table 3. CBAM fees and net costs under different carbon price scenarios (in €mn)

		25% of EUA	50% of EUA	75% of EUA
Current scope	CBAM fees	263	175	88
	Net CBAM costs	72	-16	-103

Unitary Carbon Costs

The following figures compare CBAM costs for US importers with EU ETS costs for EU producers for a selection of goods, assuming that the CBAM remains limited to its current scope. Unitary carbon costs represent the additional cost per tonne of product caused by the CBAM (for imports) and the end of free allocation under the EU ETS (for EU-made products).

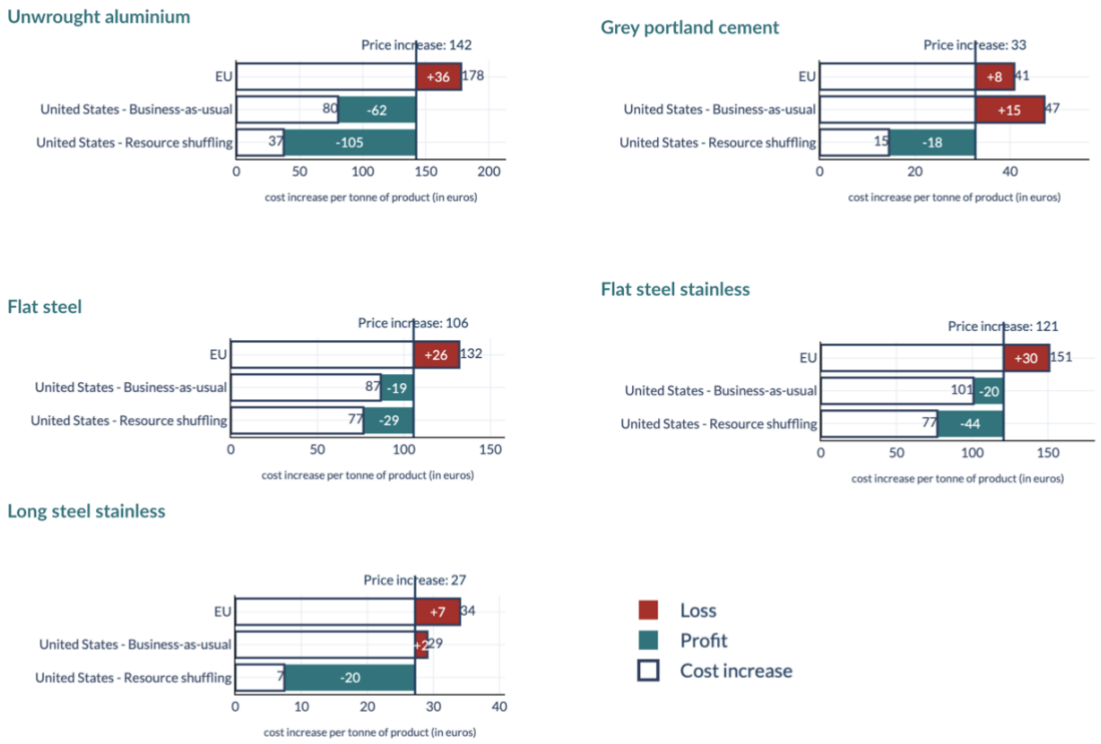

Figure 3. Comparisons between CBAM cost for importers and EU ETS costs for EU producers (in €)[7].

EU producers face cost increases of €36/t for unwrought aluminium and €26–30/t for flat steel. US aluminium importers benefit from an apparent profit of €62/t under business-as-usual, rising to €105/t under resource shuffling. Similarly, US flat steel importers gain €19–20/t in business-as-usual, and €29–44/t under resource shuffling. These differences reflect low emissions in US aluminium due to high scrap content and partially decarbonised steel production.

Annex: Scope extension

Beyond the current scope, our simulations also consider possible extensions to CBAM coverage. These include:

[7] Product categories correspond to CN codes:
- Flat steel: CN 7208 – Iron or non-alloy steel; flat-rolled products of a width of 600mm or more, hot-rolled, not clad, plated or coated.
- Flat stainless: CN 72191100 – Stainless steel; flat-rolled products of width of 600mm or more.
- Long stainless: CN 730449 – Tubes, pipes and hollow profiles, seamless, of iron (other than cast iron) or steel.

Extension to Indirect Emissions

While the CBAM already covers indirect emissions for cement and fertilisers, it is not the case for other sectors. However, such extension is on the cards, and the European Commission has run a public consultation on the matter. Our simulation includes indirect emissions embedded in all CBAM products.

Extension to Downstream products

Currently, the CBAM only covers basic materials such as sheets of steel or aluminium. However, extension down value chains, to more finished products such as car parts or cutlery, is also being considered. A legislative proposal is expected by the end of 2025. Our scenario extends the CBAM to vehicle parts and cutlery.

We selected 16 selected products of two types of goods (vehicles parts and cutlery) made from CBAM products only.

Extension to precursors

A few basic materials that serve as inputs in the manufacturing of CBAM goods are currently outside the CBAM scope but covered by the EU ETS. The Commission has also run a public consultation on the opportunity to include some of them in the CBAM. In our scenario, the extension would cover ferro-silicon, lime, coke (for steel), alumina and pre-bake anodes (for aluminium).

Extension to new products

The potential inclusion into the CBAM of new sectors is suggested in several places of the CBAM Regulation: article 30(2) (organic chemicals and polymers), recital 35 (refinery products) and recital 34 (organic chemicals). In our scenario, the CBAM is extended to 8 basic polymers, 7 refinery products and 12 chemical products.

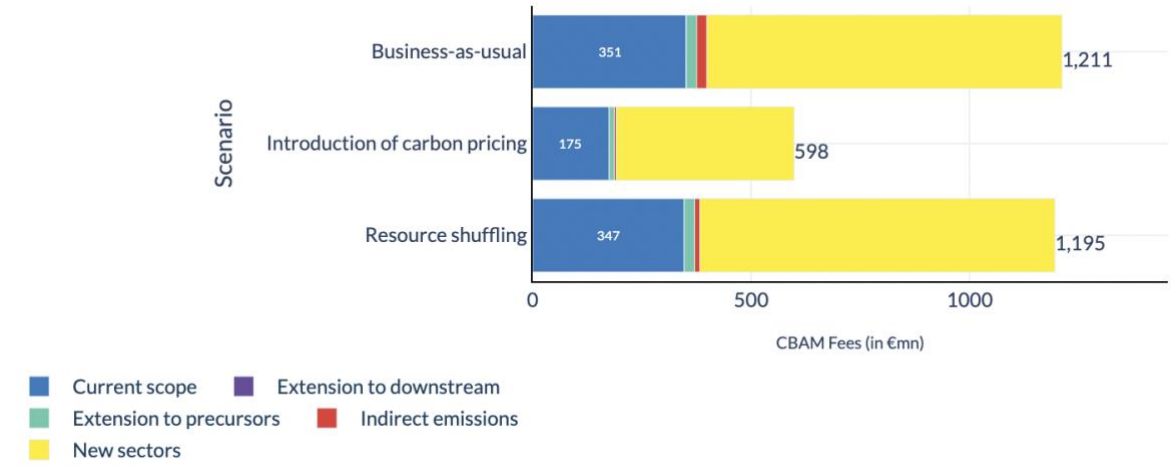

Figure 4.. CBAM fees paid for US imports in all scenarios and scopes (in €mn)

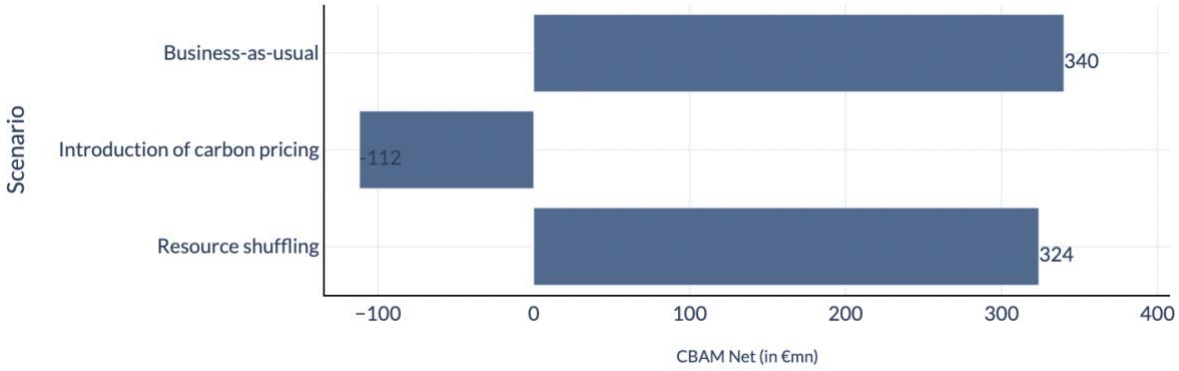

Figure 5. Net CBAM costs for US imports, under full extension of the CBAM (in €mn). The carbon pricing scenario is with a €40 carbon price (50% of the EUA price)

Table 4.. CBAM fees and net costs under different carbon price scenarios (in €mn), under full extension of the CBAM

		25% of EUA	50% of EUA	75% of EUA
Full extension of the CBAM	CBAM fees	897	598	299
	Net CBAM costs	112	-112	-335