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The EU's Carbon Border Adjustment Mechanism

Considerations for Türkiye

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Abbreviations

BAU	Business As Usual
BF BOF	Blast Furnace–Basic Oxygen Furnace
CBAM	Carbon Border Adjustment Mechanism
CCS	Carbon Capture and Storage
CCUS	Carbon Capture, Utilisation and Storage
ÇİB	Turkish Steel Exporters Association
CO_2	Carbon-dioxide
ÇŞİDB	Ministry of Environment, Urbanization and Climate Change
DRI	Direct Reduced Iron
EAF	Electric Arc Furnace
EBRD	European Bank for Reconstruction and Development
EEX	European Energy Exchange
ETKB	Ministry of Energy and Natural Resources
EU	European Union
EU ETS	EU Emission Trading System
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ISO	Istanbul Chamber of Commerce
MRV	Monitoring, Reporting and Verification
NDC	Nationally Determined Contribution
STB	Ministry of Industry and Technology
TEPAV	Economic Policy Research Foundation of Türkiye
TİM	Turkish Steel Exporters Association
TOBB	Union of Chambers and Commodity Exchanges of Türkiye
TSE	Turkish Standards Institute
TÜRKAK	Turkish Accreditation Agency
TÜSİAD	Turkish Industry and Business Association
WTO	World Trade Organization

Executive summary

This brief examines the impact of the European Union's Carbon Border Adjustment Mechanism (CBAM) on Türkiye.

The main findings suggest the following:

- Türkiye is among the most exposed economies to CBAM implications globally due to its deep trade integration with the EU. Exports of CBAM-covered products to the EU constituted 3% of Türkiye's total exports and 6.2% of its exports to the EU in 2023. While the short-term macroeconomic impacts are limited, the country faces risks as EU carbon pricing expands or if other major trade partners adopt CBAM-like measures. Emissions costs could amplify structural weaknesses in Türkiye's current industrial model, which is import dependent and energy intensive.
- Metals dominate Türkiye's CBAM exposure, with iron and steel accounting for USD 2.7 billion and aluminium for USD 2.8 billion in exports to the EU in 2023. Cement and fertiliser exports are far smaller at USD 294 million and USD 67 million, respectively, in 2023. Türkiye ranks second globally after China in CBAM-covered exports to the EU, totalling USD 6.5 billion in 2023. While steel and aluminium exports could remain viable at current carbon prices, cement and fertiliser exports could become unprofitable with CBAM charges.
- CBAM-affected sectors account for 27.2% of Türkiye's industrial greenhouse gas (GHG) emissions, despite contributing only 3.9% of industrial production value. The average carbon intensity for iron and steel exports to the EU is 2 tonnes of carbon-dioxide equivalent (tCO_2e) per tonne of product, below global averages. Aluminium, however, remains highly carbon-intensive at 8.97 tCO_2e per tonne. Cement production is also emissions-heavy, representing 17.1% of the country's industrial GHG emissions.

- Despite relatively low national-level macroeconomic effects, parts of the country are highly vulnerable to EU carbon pricing. CBAM-affected sectors employ about 160,000 workers (0.5% of total employment), concentrated in specific districts in provinces like Zonguldak (iron and steel). A single steel plant can account for over 40% of local employment, underscoring the need for just-transition measures in exposed regions. Large firms are more exposed to direct CBAM impacts, but smaller firms are often dependent on those key CBAM-exposed exporters.
- Türkiye has a robust monitoring, reporting and verification (MRV) system in place since 2014, aligned with EU standards and covering all CBAM sectors. A national Emissions Trading System (ETS) under the new Climate Law will start pilot operations in 2027 and is planned to be fully operational by 2028. The national ETS is set to enable deduction of domestic carbon costs from CBAM obligations. Securing a fair allocation of carbon costs will be critical for the country to avoid disproportionate burdens and maintain export competitiveness.
- Renewable energy resource potential – especially for solar and wind power – positions Türkiye to leverage the CBAM as a catalyst for green industrial transformation. Sectoral roadmaps envisage USD 70 billion in decarbonisation investments by 2053, highlighting opportunities such as hydrogen-based steelmaking and green hydrogen and ammonia for fertiliser.
- Going forward, Türkiye could progress from CBAM compliance to a comprehensive industrial transformation strategy, prioritising higher value-added, low-carbon products and integrating circular-economy principles. Domestic carbon pricing, international climate finance, and active climate diplomacy will be critical for the country to maintain its export competitiveness and mitigate CBAM-related risks.
- Differentiated historical responsibility for global emissions calls for a fair distribution of the cost of emissions between Türkiye and developed countries with a higher historical share in emissions. Recycling CBAM revenues for decarbonisation investments in Türkiye, as well as mobilizing additional funds and establishing joint projects would enable a fair partnership for climate neutrality.

About this study

This country-level case study forms part of a series on the design, implementation and implications of the European Union's Carbon Border Adjustment Mechanism (CBAM). Phased implementation, reporting requirements, sectoral scope, and economic impacts of the CBAM are all analysed, particularly in relation to trade and competitiveness for developing countries. With this approach, the series aims to enhance understanding among policymakers of the mechanism's potential effectiveness, as well as challenges likely to arise, and how CBAM implementation can help shape sustainable pathways for global decarbonisation, provided context-specific considerations and priorities are considered and access to financing is facilitated.

These CBAM impact studies initially focus on selected developing countries.

This case study on Türkiye explores the potential consequences of CBAM implementation, both positive and negative, along with the country's preparedness and possible responses. The study – developed by the International Network of Energy Transition Think Tanks (INETTT) and its member think tank, SHURA Energy Transition Center Türkiye – considers exporting-country perspectives and highlights the nuances of CBAM impact at both the national and sub-national levels.

1 Implications of EU carbon pricing

The inclusion of indirect emissions in CBAM carbon accounting could provide a competitive edge for some developing countries.

Border Carbon Adjustments (BCAs) are a policy tool designed to internalise the carbon cost of imported goods and thus encourage cleaner industrial production in exporting markets that aligns with decarbonisation goals of the importing market. BCAs aim to support domestic industries that invest in low-carbon technologies, specifically by imposing equivalent carbon costs on imports while also mitigating the risk of potential "carbon leakage," where production relocates to regions with weaker environmental standards.[1] These mechanisms primarily target energy-intensive, trade-exposed sectors such as steel, aluminium, cement, and chemicals.[2]

The European Union's Carbon Border Adjustment Mechanism (CBAM), implemented in 2023 under Regulation 2023/9562, represents the first large-scale application of a BCA. It forms part of the EU's broader climate strategy to reduce net greenhouse gas emissions at least 55% by 2030 (compared to 1990 levels) and reach climate neutrality by 2050.[3] These goals are embedded in the European Green Deal (2019), as well as in the "Fit for 55" legislative package (2021) that harmonises EU climate, energy, transport, and fiscal policies.[4][5]

The CBAM complements the EU Emission Trading System (EU ETS) – the world's first mandatory carbon market – by requiring EU-based importers to purchase carbon certificates when bringing goods from outside the EU, equivalent to compliance costs paid for goods produced within EU. Deductions are available if a comparable carbon price has already been paid in the country of origin (see also Box 1).[6]

While the CBAM aims to level the playing field for EU industries subject to carbon pricing, it poses economic and technical challenges for non-EU producers, particularly those in developing countries. Along with facing higher overall emissions intensities, such producers often lack the infrastructure for emissions measurement, verification, and reporting. CBAM compliance, therefore, increases their export costs to the EU and can create new competitive disadvantages. Furthermore, many global south countries lack established carbon markets and have weakened currencies (against Euro) making compliance even more costly.

Currently, the CBAM only recognises the direct emissions except for fertilisers and cement. This further exacerbates global disparities, as many countries in the Global South have a renewable-rich electricity mix, with Brazil being a prime example. The inclusion of indirect emissions in CBAM carbon accounting would reduce the carbon intensities of their exports and thus provide a competitive edge.

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[1] *Chris Kardish et al., Carbon Border Adjustments: Considerations for Policymakers (2022), https://www.c2es.org/wp-content/uploads/2022/06/carbon-border-adjustments-considerations-for-policymakers.pdf.*

[2] *Centro de Estudos de Integração e Desenvolvimento (CINDES), Global Dialogue on Border Carbon Adjustments: The Case of Brazil (2024), https://www.iisd.org/system/files/2024-07/border-carbon-adjustments-brazil.pdf.*

[3] *European Commission, Guidance Document on CBAM Implementation for Importers of Goods into the EU (2024), https://taxation-customs.ec.europa.eu/document/download/bc15e68d-566d-4419-88ec-b8f5c6823eb2_en?filename=TAXUD-2023-01189-01-00-EN-ORI-00.pdf.*

[4] *European Commission, "Fit for 55," 2025, https://www.consilium.europa.eu/en/policies/fit-for-55/.*

[5] *European Council, "European Green Deal," Consilium, 2025, https://www.consilium.europa.eu/en/policies/european-green-deal/.*

[6] *European Commission, Carbon Border Adjustment Mechanism, n.d., accessed April 11, 2025, https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en.*

These disparities must be addressed to uphold the principle of "common but differentiated responsibilities" under the Paris Agreement. As such developing economies will need financial and technical support to build the capacity for accurate emissions accounting and CBAM compliance.[7, 8]

CBAM implementation is expected to generate significant revenue – around EUR 1.5 billion annually starting in 2028 – which can boost the EU budget for initiatives like the Innovation Fund and the "Next Generation EU" recovery plan.[9] According to a preliminary report from the European Commission, the total revenues from the sale of CBAM certificates will be divided into two parts. Each member state will contribute 25% of the revenue to a temporary fund that supports the decarbonisation efforts of European companies. The remaining 75% will be directed back to EU as its own fund. While the fund aims to maintain the competitiveness of European companies in third-country markets – where they compete with cheaper and more carbon intensive products – it will be awarded to European companies producing selected CBAM goods irrespective of whether they export to the third-country markets or not. This provides a strategic advantage to European companies that have decarbonisation plans. Despite some previous discussions, none of the expected revenue is earmarked to support decarbonisation efforts in developing countries.[10] This has raised concerns about equity and the way the CBAM influences exporting countries' own industrial climate strategies.[11] Notably, countries with their own carbon-pricing system may still be required to pay the price difference if their domestic carbon costs are lower than those under the EU ETS, although no CBAM proceeds would be available to them for industry carbonisation.

Box 1. Background to the CBAM

The European Union Emissions Trading System, or EU ETS, establishes a carbon price on goods and services across the bloc's 27 member countries. By requiring companies to purchase emissions allowances under a gradually declining cap, the EU ETS creates economic incentives for progressive decarbonisation. A complementary scheme, ETS2, adopted in 2023, is set to extend carbon pricing to fuel usage in buildings, transport, and small industries starting in 2027. Both systems create financial incentives for emission reductions, specifically by capping total emissions and requiring companies to buy allowances.[12] Complementing this framework, the CBAM obliges EU-based importers to buy carbon certificates reflecting the cost of compliance with EU emissions standards, with deductions available if an equivalent carbon price has been paid in the country of origin.[13]

The transitional phase of CBAM implementation, governed by Implementing Regulation (EU) 2023/1773, introduced reporting obligations for imports of goods covered by the mechanism, effective between October 2023 and December 2025. During that transition period, importers have been required to report their direct emissions from production, indirect emissions from electricity use, and embedded emissions from precursor materials. They also had to provide data on quantities imported, total embedded emissions per tonne or per megawatt-hour, and any carbon price already paid in the country of origin.[14]

[7] *Trishant Dev and Avantika Goswami, The Global South´s Response to a Changing Trade Regime in the Era of Climate Change (Centre for Science and Environment, 2024), https://test-assets-opsaa.iica.int/storage/resource/2024/07/e7d13e0fc5b6f6b3b3d9b59fff112500.pdf.*

[8] *Rahat Sabyrbekov and Indra Overland, "Small and Large Friends of the EU's Carbon Border Adjustment Mechanism: Which Non-EU Countries Are Likely to Support It?," Energy Strategy Reviews 51 (January 2024): 101303, https://doi.org/10.1016/j.esr.2024.101303.*

[9] *European Commission, "Questions and Answers: An Adjusted Package for the Next Generation of Own Resources," Text, 2023, https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_3329.*

[10] *European Commission, Report from the Commission to the European Parliament and the Council, Provisionally published (Brussels, Belgium, 2025), https://taxation-customs.ec.europa.eu/document/download/3903da9d-44fd-4508-8915-f27ef25fe033_en?filename=Review%20Report_0.pdf.*

[11] *Anne Glaser, and Oldag Caspar, "Less Confrontation, More Cooperation: Increasing the Acceptability of the EU Carbon Border Adjustment in Key Trading Partner Countries," 2021, https://www.germanwatch.org/sites/default/files/GERMANWATCH_Increasing%20the%20acceptability%20of%20the%20EU%20CBAM_2021-06-17_0.pdf.*

[12] *European Commission, "ETS2: Buildings, Road Transport and Additional Sectors," accessed November 19, 2025, https://climate.ec.europa.eu/eu-action/carbon-markets/ets2-buildings-road-transport-and-additional-sectors_en.*

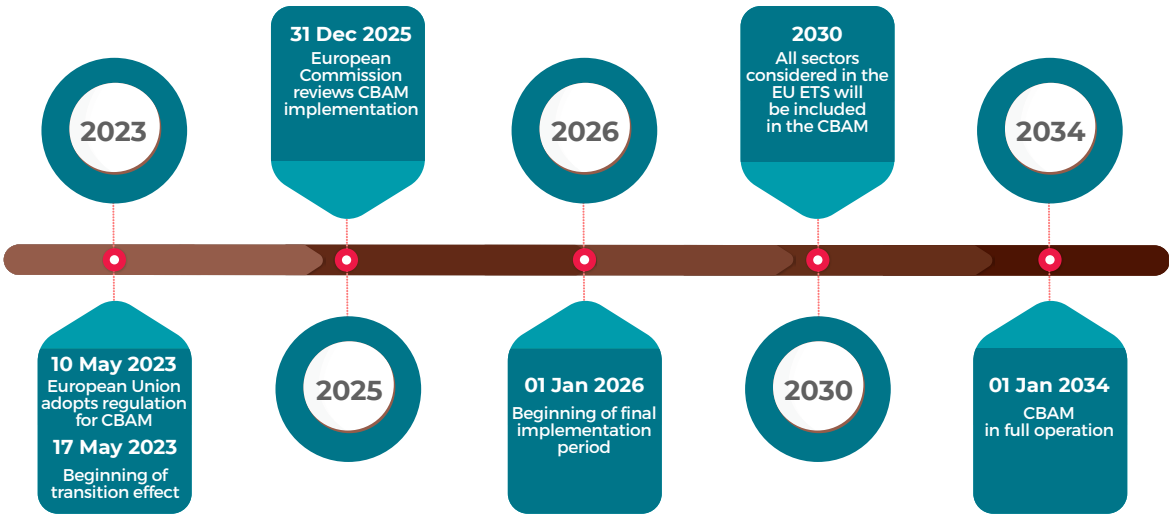
[13] *European Commission, Carbon Border Adjustment Mechanism.*

[14] *European Commission, Guidance Document on CBAM Implementation for Importers of Goods into the EU.*

Until the end of 2024, companies were allowed to use the EU methodology, equivalent methods, or default reference values. Since January 2025, only the EU methodology is accepted, with estimated equivalents based on previous methods being allowed for no more than 20% of the total reported emissions for each import.[15] However, starting 2027, the European Commission may likely include the carbon pricing available in other countries, along with the methodology for calculation in the CBAM registry.[16]

The CBAM initially applies to sectors most at risk of carbon leakage – including cement, iron and steel, aluminium, fertilisers, electricity, and hydrogen – with exemptions for low-value consignments, military imports, and, from 2025, small importers bringing in under 50 tonnes of goods annually.[17, 18] Implementation depends on close coordination among non-EU producers, EU-based importers, customs authorities, national regulators, and the European Commission, which oversees emissions reporting, verifies declarations, and manages the CBAM registry.

Figure 1. CBAM implementation timeline



Source: Authors, based on European Commission (2024)

From 2026, importers must register as "authorised declarants", submit verified annual emissions data, and purchase CBAM certificates linked to EU carbon allowance prices. These certificates must cover the embedded emissions of imports from the previous year, with the first compliance cycle in 2027, covering for 2026 imports. As free allowances under the EU ETS are phased out, the volume of certificates required will rise progressively until 2034, when they are meant to cover all embedded emissions. From that point, EU producers would no longer receive any free allocations.[19]

[15] *European Commission, Guidance Document on CBAM Implementation for Importers of Goods into the EU.*

[16] *European Commission, Officially Published: Simplifications for the Carbon Border Adjustment Mechanism (CBAM), 2025, https://taxation-customs.ec.europa.eu/news/officially-published-simplifications-carbon-border-adjustment-mechanism-cbam-2025-10-20_en.*

[17] *European Commission, Carbon Border Adjustment Mechanism (CBAM) - Questions and Answer (n.d.), accessed November 19, 2025, https://taxation-customs.ec.europa.eu/document/download/013fa763-5dce-4726-a204-69fec04d5ce2_en.*

[18] *European Commission, Officially Published.*

[19] *Adrien Assous et al., A Scrap Game: Impacts of the EU Carbon Border Adjustment Mechanism (2024), https://sandbag.be/wp-content/uploads/Sandbag-CBAM-Scrap-Game-2024.pdf.*

2 Country introduction

Inherent inefficiencies in low-technology industries, combined with low value added and high import-dependent production, have given rise to structural problems in the industrial sector.

The European Union is Türkiye's leading trading partner, constituting over 40% of the country's total export value. Negotiations over Türkiye's membership of the bloc have continued over several decades, and it has been part of the EU Customs Union since 1995. Within this context, the CBAM, emerges as a unique trade measure encouraging alignment with the EU climate policies.

The Turkish industrial sector is relatively developed for an emerging economy, with manufacturing accounting for around 20% of GDP and 88% of exports. Despite ups and downs, industrial production remains the main driver of Türkiye's economic growth, which averaged 5.5% annually in 2000-2022.[20] Yet inherent inefficiencies in low-technology industries,[21] combined with low value added and high import-dependent production, have given rise to structural problems. Foreign trade and current account deficits limiting overall economic development and competitiveness are keeping Türkiye in the middle-income trap.[22]

Low-technology sectors (*e.g.*, food, textiles, apparel, paper, furniture) or those classed as medium-low (*e.g.*, basic metals, glass-cement-ceramics, refined petroleum products) account for 67% of total industrial value added[23] and 79% of industrial employment in Türkiye. The resulting production mix is highly carbon-and energy-intensive, with relatively low-technology and low value-added sectors representing 80% of the country's industrial (energy and process related) GHG emissions and 21% of the country's total GHG emissions in 2022.[24] The same sectors account for about 80% of Türkiye's total industrial energy consumption in 2022.[25]

Türkiye's annual export value totalled USD 256 billion in 2023. Major export products from the country include motor vehicles, machinery and equipment, electrical appliances, textiles and apparel, fabricated metal products, iron and steel, and aluminium and derivative products. According to 2023 data (SHURA 2024a; TÜİK 2024a), the ten manufacturing sectors with the highest shares of production value are food (14.0%), basic metals including iron and steel and aluminium (10.6%), motor vehicles (8.7%), fabricated metal products (6.8%), textiles (6.5%), machinery & equipment (5.6%), electrical equipment (5.5%), other non-metallic minerals including glass, ceramics and cement (5.4%), chemicals (5.3%), and rubber and plastics (5.0%).[26]

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[20] TÜİK (Turkstat), "Yıllık Sanayi ve Hizmet İstatistikleri, 2023," 2024a, https://data.tuik.gov.tr/Bulten/Index?p=Yillik-Sanayi-ve-Hizmet-Istatistikleri-2023-53782.

[21] The classification of sectors as low, low-medium, high-medium and high in terms of technology usage is based on standard NACE codes – the statistical classifications for economic activities in the European Community. Low technology sectors include food, beverages, tobacco products, textiles, apparel, pulp and paper products, leather and related products, wood products and furniture. Low-medium technology sectors include coke and refined petroleum products, rubber and plastic products, other non-metallic minerals (cement-glass-ceramics), basic metals, fabricated metal products, printing and reproduction, installation and repair of machinery and equipment. High-medium technology sectors include chemicals and chemical products, electrical equipment, other machinery and equipment, motor vehicles, other transport vehicles (excluding air and space vehicles) and other manufacturing not classified elsewhere. High technology sectors include pharmaceuticals, computers, electronic and optical devices and air and space vehicles.

[22] This refers to a situation where GDP per capita has reached a middle-income level but then development slows and the country does not achieve high-income status.

[23] Value-added is defined as the gross income generated by production activities after operational costs, such as raw materials, energy, maintenance and repair are deducted and salaries of employees involved in production activities are added. It is an economic indicator of the additional value created by the production activity.

[24] Author's calculations based on Turkish Statistical Institute (2024).

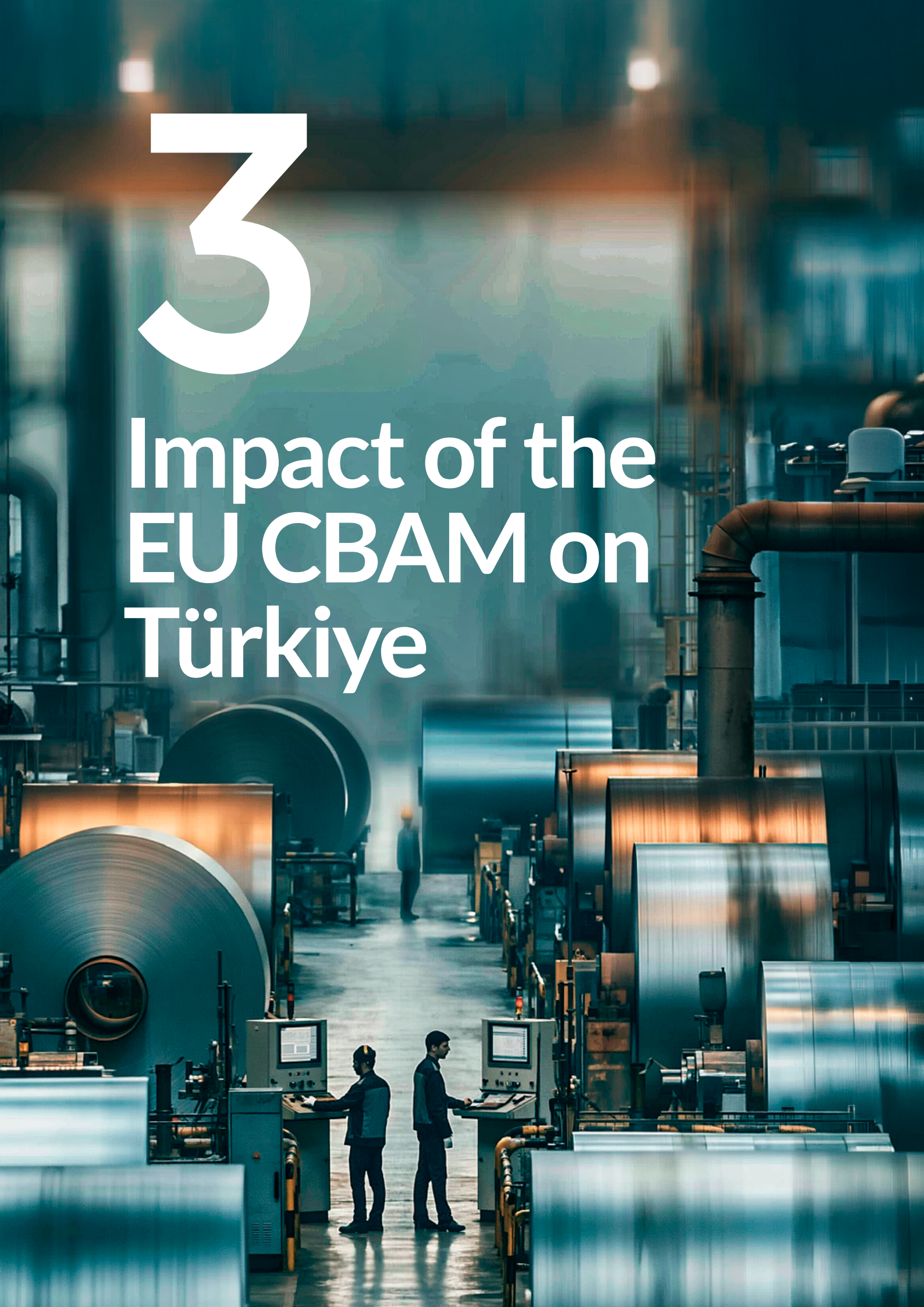
[25] Author's calculations based on Republic of Türkiye Ministry of Energy and Natural Resources.

[26] TÜİK (Turkstat), "Yıllık Sanayi ve Hizmet İstatistikleri, 2023," 2024a. https://data.tuik.gov.tr/Bulten/Index?p=Yillik-Sanayi-ve-Hizmet-Istatistikleri-2023-53782.

While Türkiye is resource-poor in terms of fossil fuels, it is rich in renewable energy sources, including hydropower, solar and wind. Nevertheless, the country relies on imported fossil fuels for 79% of its primary energy supply, compared to just 3% from domestically produced fossil fuels and 18% from renewables.[27] In terms of renewables, hydropower potential is already extensively developed. In addition, solar and wind resources have become competitive with fossil-based power generation, creating major opportunities to decarbonise the economy and enhance energy security. Domestic manufacturing of renewable energy equipment, such as solar panels, wind towers, blades and rotors, has become a flourishing area of industrial activity within the last 10 years.

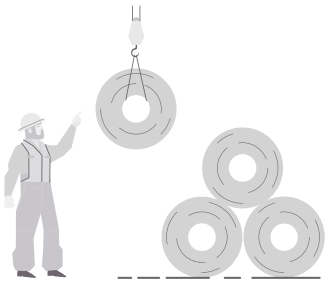
This brief examines the costs and benefits for Türkiye of exporting CBAM-affected products, considering trade balances, impacts in related sectors, and transport costs. It also looks at the readiness of Turkish institutions and companies for CBAM implementation and outlines options for Türkiye to adapt to the CBAM and pursue longer-term industrial transformation.

[27] *In 2023, the share of renewable resources in total primary energy supply was as follows: geothermal 7.8%, hydro 3.5%, biomass and waste 3.2%, wind 1.9% and solar 1.7%.*



3

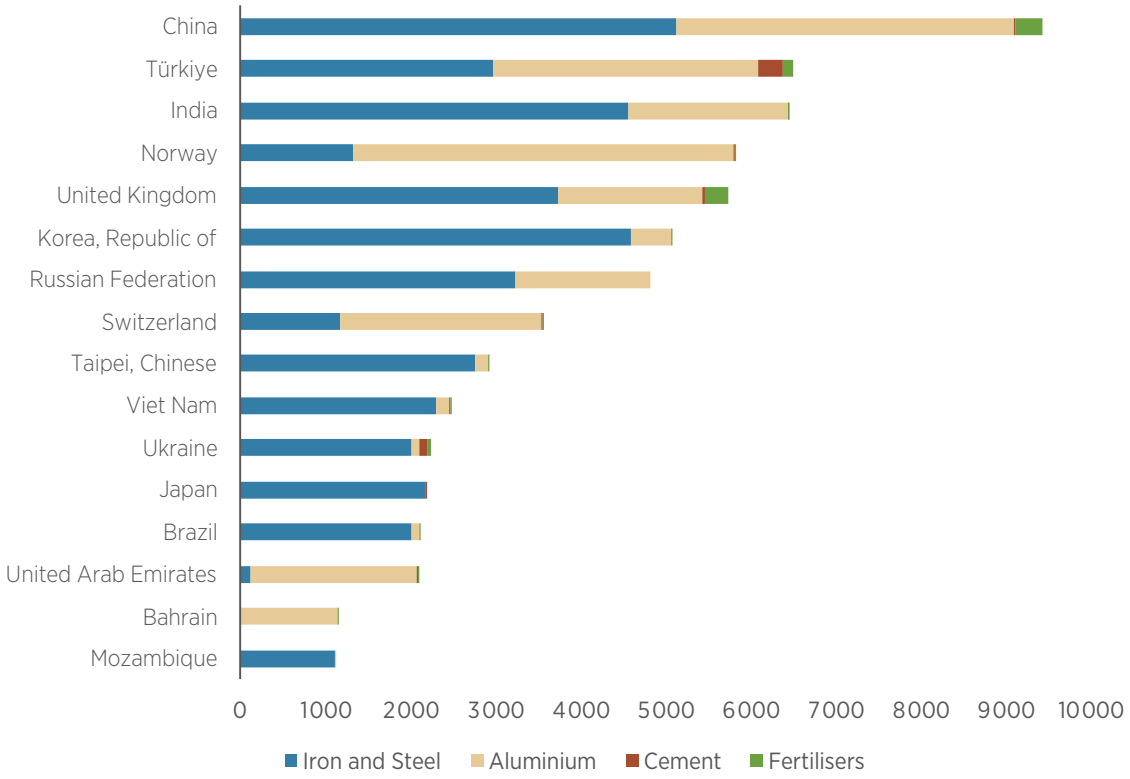
Impact of the EU CBAM on Türkiye



Even if CBAM impacts are minimal for the Turkish economy as a whole, they may be significant at the sub-national and sector level.

Türkiye ranks among the top three exporters of CBAM-covered products to the EU, with particularly high export values in iron and steel and aluminium. EU imports of CBAM-covered products from the country totalled USD 6.5 billion in 2023. After China (USD 9.4 billion), Türkiye was the second largest exporter of those products to the EU, closely followed by India (USD 6.4 billion).[28]

Figure 2. Top exporters of CBAM-covered products to the EU in terms of export value (2023, million USD)



Source: International Trade Centre 2025; Author's calculations

CBAM-covered products constitute 6-7% of Turkish exports to the EU, with the EU-bound share of those products accounting for about 3% of Türkiye's total export value.

In terms of export value per sector, iron and steel and aluminium rank higher among global and EU-bound exports, while cement and fertiliser have lower shares as shown in Table 1.

[28] *International Trade Centre, "Trade Statistics," 2025, https://www.intracen.org/resources/data-and-analysis/trade-statistics.*

Table 1. Share of CBAM-covered products in Türkiye's total exports and exports to the EU (2023)

Product	Total exports			Exports to EU		
	Export value (USD million)	Ranking	Share of total	Export value (USD million)	Ranking	Share of total
• Iron and steel (72)	8,860	9	3.5%	2,687	10	2.8%
• Aluminium (76)	5,317	12	2.1%	2,803	9	3.0%
• Cement (2523)	1,264	49	0.5%	294	44	0.3%
• Fertiliser (31)	511	61	0.2%	67	65	0.1%
• Total CBAM	15,952		6.2%	5,851		6.2%

Source: TÜİK 2026.

Note: The statistics are based on two-digit general trade system codes. Each ranking indicates the product standard among 99 product groups classified under the codes. Iron and steel (72) does not include "articles of Iron and steel" (73), some of which also fall under the CBAM.

Understanding the full impact of the CBAM on Türkiye requires an analysis of domestic production, value added, and relative emissions for each product covered by the mechanism. Table 2 shows the share of the CBAM-affected products in industrial production and compares the emissions costs in CBAM accounting to value added[29] by the exports in the sector.

[29] *Value-added is defined as the gross income generated by production activities after operational costs, such as raw materials, energy, maintenance and repair are deducted and salaries of employees involved in production activities are added. It is an economic indicator of the additional value created by the production activity.*

Table 2. Share of CBAM-affected products in Türkiye's industrial production and greenhouse gas emissions (2023, mil. USD)

	Share in manufacturing value	Value-added ratio*	Share in manufacturing-related GHG emissions	Average carbon intensity of total exports (tCO_2e per tonne of product)**	Average carbon intensity of exports to the EU (tCO_2e per tonne of product)**
● Iron and steel	2.9%	25.4%	7.9%	2.41	2.00
● Aluminium	0.3%	22.4%	1.0%	8.99	8.97
● Cement	0.6%	48.2%	17.1%	0.98	1.04
● Fertiliser	0.1%	16.2%	1.2%	0.98	0.98
● Total CBAM	3.9%	28.4%	27.2%	-	-
● Total manufacturing	100%	24.6%	100.0%	-	-

Sources: TÜIK 2024a, TÜIK 2024b and Author's calculations based on SHURA 2025.

* value added / production value.

** Average of 2020-2022 based on product composition and the Emissions Database for Global Atmospheric Research (EDGAR) from the European Commission's Joint Research Centre based on SHURA 2024a.

Note: tCO_2e = tonnes of carbon-dioxide equivalent.

The value added in all these CBAM-affected industries tends to be higher than the Turkish industrial average, but lower than international averages for similar capital-intensive industries. Türkiye's positioning, consequently, reflects a comparatively low-value product mix, high dependence on imported inputs and intermediate products (including energy), lower-level integration with global value chains, ongoing technology dependency, and persistent financing difficulties.[30]

The low value added in the basic metals industry can be explained by the high share of iron and steel scrap processing through electric arc furnace (EAF) systems, and a generally low-value product mix. About 70% of Türkiye's iron and steel production involves EAF processing of scrap iron, much of it imported, into long products such as steel rebars for construction.[31] Inputs imported at relatively high cost are thus turned into low-unit value products. This is the reverse of the global pattern, with about 70% of steel production worldwide being carried out by integrated plants processing iron ore rather than scrap.[32] Türkiye's predominant processes and product mix lower the carbon intensity of Turkish steel, they also add less value, inhibit product diversity, and increase import dependence for scrap. Despite these disadvantages, Türkiye is among the top 10 global steel producers, ranking eighth in 2023 and 2024.[33]

[30] *SHURA, Industrial Policy Alternatives for Türkiye Within the Framework of a Just Transition (2024), https://shura.org.tr/en/industrial-policy-alternatives-for-turkiye-within-the-framework-of-a-just-transition/.*

[31] *Turkish Steel Producers Association, "Turkey's Crude Steel Production Rises by 3.3% to 38.1 Million Tons in 2025." TÇÜD, 2026, https://celik.org.tr/en/info-center/assessment/turkey-s-crude-steel-production-rises-by-3-3-to-38-1-million-tons-in-2025).*

[32] *World Steel Association, "World Steel in Figures 2025," 2025, https://worldsteel.org/data/world-steel-in-figures/world-steel-in-figures-2025/.*

[33] *Turkish Steel Producers Association, "Turkey's Crude Steel Production Rises by 3.3% to 38.1 Million Tons in 2025." TÇÜD, 2026, https://celik.org.tr/en/info-center/assessment/turkey-s-crude-steel-production-rises-by-3-3-to-38-1-million-tons-in-2025.*

Similarly, only about 5% of Turkish aluminium production is primary, with the rest depending on recycled aluminium and imported primary and intermediate products.[34] This industry structure contributes to relatively low-value aluminium outputs.

In the case of fertiliser, Türkiye is a net importer by a wide margin. In addition, domestic fertiliser production is highly import dependent and results in few exports.[35]

Cement, with higher domestic inputs and value added, is an important exception among the main CBAM-affected products. Still, transport costs limit cement as an export product.

Notably, CBAM-affected products account for 27.2% of the country's industrial greenhouse gas (GHG) emissions (excluding Scope 2, or energy-related emissions), compared to just 3.9% of total industrial production value. Nevertheless, the EAF process in the iron and steel industry reduces the average carbon intensity of exports to the EU compared to Türkiye's global exports. Scrap-based processes mean that Türkiye's iron and steel, as well as its aluminium, are less carbon-intensive than most competitors.

3.1. Exposure of CBAM-covered sectors and products

While CBAM-affected products account for moderate shares of Türkiye's exports, sector-level exposure can be significant. The country exports about half of its production volume (by weight) of basic metals, mainly iron and steel and aluminium. Those exports are especially vital in periods when the domestic market is weak.

The EU is a major market for metal exports, accounting for over half of aluminium and about a third of iron and steel exports from Türkiye. Other CBAM-covered products, namely cement and fertiliser, entail less exposure in practice, because they are mainly produced for the domestic market, with minimal shares being exported to the EU.

Table 3 shows, costs incurred for emissions (excluding Scope 2&3) could cut substantially into export value-added in the years ahead.

Table 3. Direct costs and benefits of Türkiye's CBAM-covered product exports to the EU in the business-as-usual scenario,* cumulative 2026-2050 (EUR billion), at a carbon price of EUR 70/tonne**

	Iron and steel	Aluminium	Cement	Fertiliser	Total CBAM
• Direct emissions cost	37.1	16.0	11.9	0.6	65.6
• Export value added	69.0	20.9	7.0	0.9	97.8
• Net direct benefit***	31.9	4.9	-4.9	0.3	32.2

Source: SHURA 2025; Authors' calculations.

* SHURA's Business-As-Usual (BAU) scenario assumes product composition and export growth rates following current trends in each sector all the way to 2050. No decarbonisation is assumed.

**EUR 70/tonne is close to current carbon price levels in the EU Emissions Trading System.

*** Total Net Direct Benefit: Sectoral export value added minus direct emissions cost due to CBAM.

[34] *TALSAD, "Turkish Aluminium Producers Association Sector Reports 2022-2024," https://talsad.org.tr/tr/sektor-raporlari.*

[35] *During 2020-2025 average annual imports of fertilizers including ammonia was 2 billion USD while exports were 585 million USD (TÜIK 2026).*

At a carbon price of EUR 70/tonne, emissions fees could take up nearly two-thirds of the value added from exports of current CBAM-covered products over the next 25 years (2026-2050), assuming Türkiye's exports to the EU continue with the same production compositions and growth rates in each sector. In other words, carbon pricing would reduce direct net benefits from the affected exports to nearly one-third of what they would be without carbon pricing. Moreover, iron and steel is the only CBAM-affected sector that would continue generating significant net benefits for Türkiye at current EU carbon price levels, excluding indirect costs.

However, EU carbon prices are set to increase in the medium term as free allowances are phased out. The carbon price to equalise costs for direct emissions with value added from exports would be around EUR 130/tonne for iron and steel, EUR 80/tonne for aluminium and EUR 105/tonne for fertiliser. For cement, Türkiye's value added from exports is already lower than current EU carbon price levels. At the sector level, the CBAM will erode export value unless covered sectors adjust their product composition to add more value or simply reduce their emissions.

The picture for individual firms is less clear; while emissions costs may erode average value-added of production, individual firms may continue to profit from commercial and financial activities related to the exports of CBAM-covered products. Overall, however, emission costs will become an issue for most firms. For fertiliser and cement producers, CBAM-related emissions costs could make any exports to the EU unprofitable.

Especially for cement, exports normally involve cross-border trade over relatively short distances, which can complement businesses in a producer's domestic market. The EU's introduction of the CBAM, therefore, will affect Turkish producers that have pursued exports to offset low cycles or dedicated their entire capacity to EU markets, often taking advantage of proximity to seaports.

Exporters of metal products (iron and steel, aluminium) could prove more resilient to the EU border carbon pricing at current levels. Steel firms working with scrap iron in the EAF process already tend to achieve lower emissions intensity than EU-based competitors where the integrated route with higher carbon intensity is more common.

Within each major sector, CBAM impacts will also be uneven among different types of firms. A recent study by the Central Bank of the Republic of Türkiye finds that most firms with a high share of CBAM-related exports are large, rather than small or microenterprises, and account for higher shares of internal trade (both sales and purchases).[36] Large firms, consequently, are more directly exposed to CBAM impacts, but smaller firms may be indirectly affected due to dependence on key exporters.

In the medium term, focusing on higher value-added products for the domestic market, specifically to replace imports in iron and steel and aluminium, could enhance competitiveness and add value in forward-linkage industries such as construction and infrastructure, machinery and equipment, electrical appliances, energy equipment and automotive components and manufacturing. Even as the CBAM reduces Türkiye's export competitiveness, repurposing CBAM-covered products as inputs to domestic industries could boost overall industrial competitiveness. Beyond the shift in product composition, Türkiye's competitiveness will depend on improving energy efficiency and, in the longer-term, making a comprehensive transition to low-carbon production processes.

[36] *TCMB, Sınırda Karbon Düzenleme Mekanizmasının Firma Boyutuyla İncelenmesi, 2025. https://www.tcmb.gov.tr/wps/wcm/connect/6c31ce5a-91ee-4761-9bd0-c93f5eaf5d95/en202510.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-6c31ce5a-91ee-4761-9bd0-c93f5eaf5d95-pw7ETMm.*

Domestic carbon pricing will also come into play. Türkiye's energy trading platform, EPİAŞ, has developed an ETS Market Management System Platform after signing a memorandum of understanding with the European Energy Exchange (EEX) in 2024 to develop the emissions trading system in Türkiye.[37] Completion of test runs, technical integration of the MRV processes, preparation of users' guides and training sessions for participants are planned for 2026. Pilot implementation will run through 2027 prior to full implementation beginning 2028.[38] However, discussions continue over the particulars of how to price emissions, along with the overall costs and benefits of national carbon pricing.

Broadly, Türkiye has been preparing for several years to adapt to the European Green Deal (announced in December 2019), following up with a Green Deal Action Plan in July 2021, just as CBAM measures were first proposed in Brussels. Nevertheless, the country has yet to implement any systematic industrial transformation. Similarly, Türkiye lacks a definitive net-zero carbon pathway and a clear plan for phasing out fossil-fuels. Intermediate targets are currently unclear or insufficient to reach net zero.

Low-carbon sector roadmaps published by the Ministry of Industry and Technology in 2023-2024 envisage USD 70 billion of investment by 2053 for partial decarbonisation of CBAM-affected industries (iron and steel, aluminium, cement and fertiliser).[39] In practice, these road maps are difficult to implement because they assume the continuation of unsustainable production and growth trends and offer limited prioritisation among decarbonisation technologies, such as electrification, hydrogen and carbon capture and storage (CCS) or carbon capture, utilisation and storage (CCUS).

3.2. Macroeconomic implications

The Istanbul-based SHURA Energy Transition Centre has analysed the long-term implications of CBAM for Türkiye. According to SHURA (2025), the current scope of the CBAM ensures relatively limited short-term impact, as the affected product range, at least initially, represents a negligible share of Türkiye's gross domestic product (GDP).[40] More significant for Türkiye's trade outlook, however, are EU plans to progressively expand the scope of CBAM over the next ten years, as well as the potential adoption of similar measures by other leading trading partners, such as the United Kingdom and even the United States (should current policies change).

SHURA (2025) also identifies several major areas of impact, including both costs and benefits of exporting CBAM-covered products as well their impacts on forward-and backward-linkage industries:

International trade balance in CBAM-covered products: Exports of CBAM products could result in trade surpluses (benefit) or trade deficits (cost) in each sector.

Impacts on forward- and backward-linkage industries: Increased exports add value in backward-linkage industries, like scrap metal or energy suppliers (benefit) while reducing value in forward-linkage industries, like automotive or construction (cost).

Transport-related export costs: Fuel consumption stemming from the export of CBAM-covered products is an indirect impact (cost). So are the associated emissions costs, even though current CBAM accounting ignores Scope 3 emissions (indirect emissions across the value chain). Fuel costs, mainly due to imported petroleum, significantly influence Türkiye's macroeconomic and trade balances. Transporting CBAM-covered products mainly as bulk cargo over relatively long distances, results in both environmental and economic costs.

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[37] *EEX, "EEX and EPİAŞ Sign MoU for the Development and Implementation of a Turkish ETS," EPİAŞ, 2024, https://www.eex.com/fileadmin/Global/News/EEX/EEX_Press_Release/2024/20240228_MoU_EPIAS.pdf.*

[38] *Haber Merkezi, "Türkiye ETS'de Pilot Uygulamalar Başlıyor," İklim Haber, January 23, 2026, https://www.iklimhaber.org/turkiye-etsde-pilot-uygulamalar-basliyor/.*

[39] *T.C. Sanayi ve Teknoloji Bakanlığı, Endüstriyel Karbonsuzlaştirma Yatirim Platformu Kuruluyor, 2024, https://www.sanayi.gov.tr/anasayfa.*

[40] *SHURA, CBAM and Türkiye: Sectoral Interactions, Benefits and Costs (2025), https://shura.org.tr/en/cbam-and-turkiye-sectoral-interactions-benefits-and-costs-executive-summary/.*

Under SHURA's BAU scenario, as in current reality, Türkiye achieves a negative overall trade balance with its CBAM-covered product exports, even when imported energy and certain raw materials classified under different product groups are excluded. An officially positive trade balance with the EU, stemming mainly from Turkish aluminium exports, is misleading, as this excludes the country's imports of primary aluminium from the rest of the world to enable its own aluminium exports to the EU.

Table 4. Net direct impact of Türkiye's total CBAM-covered exports, globally and to the EU in the business-as-usual scenario,* cumulative 2026-2050 (EUR billion)

	Iron and steel	Aluminium	Cement	Fertiliser	Total CBAM
● Total trade balance	-111.0	-29.6	43.9	-73.2	-169.9
● Trade balance with the EU	-43.5	78.2	25.3	-1.8	58.2

Source: SHURA 2025; authors' calculations.

* SHURA's BAU scenario assumes product composition and export growth rates following current trends in each sector all the way to 2050. No decarbonisation is assumed.

Indirect impacts stemming from backward and forward linkages[41] represent the costs and benefits of exporting CBAM-affected products versus using the same products in the domestic market. While production for export boosts backward-linkage industries, this entails an opportunity cost in forward-linkage industries that lose locally produced inputs. If exports growth continues in line with past trends, exports of CBAM products will benefit backward-linkage industries, while forward-linkage industries must forego domestic inputs from the affected sectors. On balance, this BAU scenario gives all linkage industries in Türkiye a net negative impact from exports of CBAM-covered products, both in total global terms (Table 4) and to the EU (Table 5).

Table 5. Costs and benefits in linkage industries for Türkiye's CBAM-covered exports to the EU in the business-as-usual scenario,* cumulative 2026-2050 (EUR billion)

	Forward-linkage industries	Backward-linkage industries	Net benefit for linkage industries
● Iron and steel	-3.8	+1.0	-2.9
● Aluminium	-4.4	+3.1	-1.3
● Cement	-1.5	+1.0	-0.5
● Fertiliser	-2.5	+0.4	-2.2
● Total	-12.3	+5.5	-6.8

Source: SHURA 2025; authors' calculations.

* SHURA's BAU scenario assumes product composition and export growth rates following current trends in each sector all the way to 2050. No decarbonisation is assumed.

[41] *Forward-linkage industries are those receiving their inputs from the sector in question, while backward-linkage industries are those giving the sector its inputs. To measure CBAM impacts on forward- and backward-linkage industries, this study has calculated changes in production in relation to each main sector, based on input-output tables published by the Turkish Statistical Institute (TÜİK), also known as TurkStat.*

Total costs stemming from the transportation of CBAM-covered exports exceed value added from exports to the world by 13% and from exports to the EU by 6%. This impact is particularly significant for cement and fertiliser, for which transport costs exceed export value added by five times or more. For iron and steel and aluminium, the ratio of transportation costs to value added is in the range of 50-75% – still high, but more manageable.

Table 6. Costs for transporting Türkiye's CBAM-covered exports in the business-as-usual scenario, cumulative 2026-2050 (EUR billions), at a carbon price of EUR 70/tonne

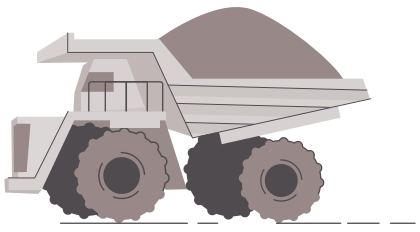
Transportation costs: fuel + emissions (cumulative 2026-2050; EUR billion) [42]

	For total exports	For exports to the EU
• Iron and steel	131.4	42.6
• Aluminium	21.9	10.9
• Cement	72.9	36.5
• Fertiliser	29.2	13.9
• Total	255.5	103.9

Source: SHURA 2025; Authors' calculations.

Under SHURA's BAU scenario, the cost of emissions under the current CBAM represents around one-third of total export costs for CBAM-covered products at a carbon price of EUR 70/tonne. When the total costs[43] are deducted from the value added by exports, additional benefits in backward-linkage industries and trade surpluses, the resulting net benefits are negative. In other words, the total costs of exporting CBAM-covered products exceed the total economic benefits.

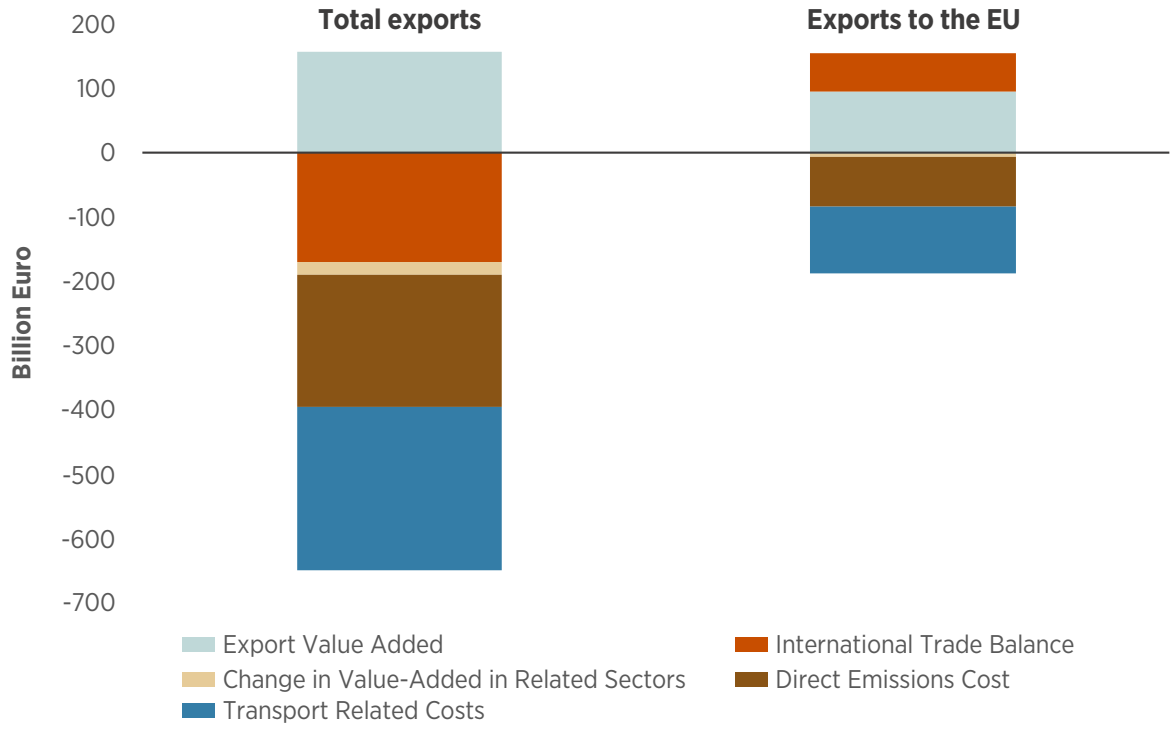
Even without CBAM-related emissions costs, the net benefit of exporting CBAM-covered products is negative in terms of total exports. However, exports to the EU would generate positive net economic benefits because of lower transportation costs and trade surpluses in some products, such as cement and aluminium, if carbon border pricing is excluded. In other words, the CBAM magnifies the effects of already existing economic costs in Türkiye's industrial exports.



[42] *Transport-related carbon emissions are derived from the quantities of fossil fuel used in transport. Fuel consumption calculations take into account both the transportation of high-volume inputs used in production and all forward and backward movements of the products. These calculations utilise data on both the share of fuel consumption attributed to commercial cargo transportation in Türkiye and the distribution of fuel consumption by transport mode (e.g., the share of high-volume bulk cargo in sea and road transport). Fuel costs are calculated using the current fuel price, by multiplying the fuel consumption by the unit fuel price.*

[43] *Total costs include emissions costs resulting from the current CBAM, foregone benefits in forward-linkage industries, trade deficits and transport costs.*

Figure 3. Comparative magnitude of various costs and benefits in the business-as-usual scenario,* cumulative 2026-2050 (EUR billion), at a carbon price of EUR 70/tonne**



Source: SHURA 2025; Authors' calculations.

* SHURA's BAU scenario assumes product composition and export growth following current trends for each sector to 2050. No decarbonisation is assumed.

** EUR 70/tonne is close to current carbon-price levels in the EU Emissions Trading System.

Total impacts of CBAM-covered exports, including emissions costs, still represent a small share of GDP. In the BAU scenario, the total net benefits (total direct and indirect benefits minus total direct and indirect costs) are noticeably negative for exports to the world and neutral for exports to the EU. Yet even if those calculated impacts remain small on a macroeconomic scale, the loss of value added at the sector level can be large, as BAU scenarios for cement, aluminium and fertiliser show. While aluminum exhibits a large positive balance for the EU, this is mainly due to the positive trade balance with the EU in aluminum products.

Table 7. Net benefits from Türkiye's CBAM-covered exports in relation to total GDP and by sector (%), cumulative 2026-2050 (EUR billion), at a carbon price of EUR 70/tonne

	Total exports	Exports to the EU
• Net benefit / GDP	-0.16%	0.00%
• Net benefit / sectoral value added		
• Iron and steel	-0.94%	-0.288
• Aluminium	-221%	371%
• Cement	-176.2%	-11.5%
• Fertiliser	-466%	-153%

Source: SHURA 2025; Authors' calculations.

3.3. Sub-national employment implications

Even if CBAM impacts are minimal for the Turkish economy as a whole, they may be significant at the sub-national level. The SHURA policy study, "Just Transition and Regional Employment: Policy Choices for Türkiye," (SHURA 2024b), explores the magnitude of direct and indirect employment risks on CBAM-affected sectors due to the EU pressure for decarbonisation.

As of 2021, CBAM-affected industries (iron and steel, aluminium, cement and fertiliser) employed about 160,000 people, constituting 0.5% of Türkiye's workers and 2.8% of its manufacturing employment. Looking at the major sectoral groups they belong to, basic metals, non-metallic minerals (glass-ceramics-cement) and chemicals (including fertiliser), they employed a total of 674,000 people, constituting 2.3% of Türkiye's total employment in the same year.[44] The immediate risk of job losses due to CBAM-driven decarbonisation appears low, with production in the affected sectors expected to continue even as the most carbon-intensive parts of the production process become obsolete.

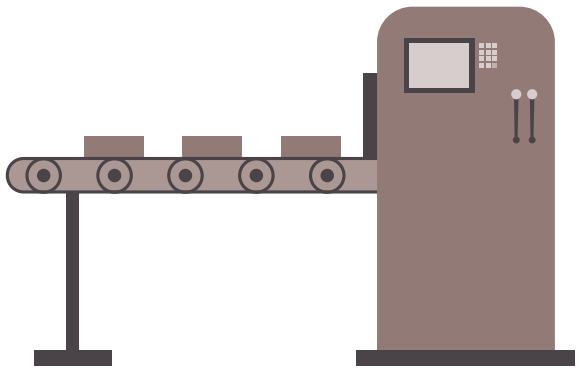
Nevertheless, there are regional enclaves where employment in these sectors forms an important part of the local economy. For instance, direct employment in the basic metals sector constitutes 6.7% of total employment in the Western Black Sea region (TR81) encompassing Zonguldak, Karabük and Bartın provinces, home to two of the country's three integrated steel plants (transforming iron ore to flat and long steel) and hard coal mines. Iron and steel plants are the main employer in certain districts, notably Kilimli (42.5% of total employment), Kozlu (22% of total employment) and Ereğli (12% of total employment) in Zonguldak.

Indirect employment in sectors providing goods and services for those iron and steel hubs spills over to nearby the Amasra district (52% of total employment) in Bartın province as well as to the relatively distant iron mining provinces of Sivas, Malatya and Erzincan in Divriği (50%), Hekimhan (30%) and Kemaliye (25%) districts, respectively.

Cement plants are more evenly distributed across the country. Still, they are key employers for certain districts such as Artova of Tokat (46%), Baskil of Erzurum (18%) and Lalapaşa of Edirne (16%). Fertiliser plants, meanwhile, only account for about 4,000 direct jobs, mostly in highly industrialised parts of the country, suggesting limited local employment impact due to CBAM measures.

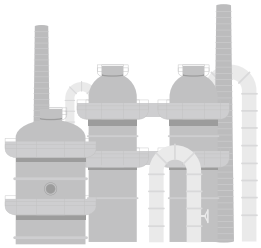
Even where a single production facility or related sub-industries account for the bulk of district-level employment, the affected population is often small. Still, the local effects of job losses can be severe.

To ensure a just transition, Türkiye must take account of regional and local development, foster alternative job opportunities, and focus support mechanisms on affected districts.



[44] *2021 was the latest available data at the time of the study. In 2024, iron and steel, aluminium, cement and fertiliser employed about 183,000 people, constituting 0.5% of Türkiye's workers and 2.7% of its manufacturing employment.*

4 Institutional and technical readiness for CBAM implementation



Key sectors need to shift towards higher-value, lower-carbon production, with coordinated policy and industry action to align sustainability with industrial and trade competitiveness.

Türkiye's industries, institutions, and carbon accounting systems hold strong potential for CBAM compliance and sustainable future trade development. Yet heavy reliance on fossil fuels dilutes the effectiveness of the country's climate and industrial transformation policies. Firms in CBAM-affected industries continue to face major capability and financing gaps that limit meaningful decarbonisation. Key sectors need to shift towards higher-value, lower-carbon production, with coordinated policy and industry action to align sustainability with industrial and trade competitiveness.

4.1. Climate and energy governance

Türkiye's public policy landscape in relation to energy and environmental issues has several layers. A national five-year development plan is the overarching policy document that spans all related high-level policies and targets. Linked to the development plan are annual programs with detailed actions and sub-targets updated annually on a rolling basis. On the executive side, the Ministry of Energy and Natural Resources (ETKB) oversees energy transition matters, while the Ministry of Environment, Urbanization and Climate Change (ÇŞİDB) oversees issues related to emissions.

Türkiye's 12th National Five-Year Development Plan (2024-2028) puts green and digital transformation at the forefront.[45] Already in 2021, Türkiye had ratified the Paris Agreement and declared a net-zero emissions target for 2053. The country's first international climate pledge, or nationally determined contribution (NDC) under the Paris Agreement, was revised in 2022 and updated in 2023. The updated NDC stipulates a 41% decrease in GHG emissions by 2030 compared to a projected emissions scenario, meaning a 21% increase in actual emissions compared to 2021.[46] In 2025, Türkiye announced its NDC 3.0 during COP31 setting a target of 643 $MtCO_2e$ for 2035, which is 7.5% below the previous target for 2030, but still 17% higher than the actual emissions in 2021.[47] The Ministry of Energy and Natural Resources has suggested that energy-related emissions would peak in 2038.[48]

The ministry's main policy is enhancing energy security by increasing the share of domestic resources in energy production. Within this framework, increasing renewable power generation capacity is treated as a top priority. Türkiye's National Energy Plan, announced in 2024, targets 120 gigawatts of wind and solar energy capacity by 2035, which means increasing existing wind and solar capacity 3.1-fold and upscaling the target for renewables in the National Energy Plan by 45%.[49]

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[45] *Türkiye Cumhuriyeti Cumhurbaşkanlığı Strateji ve Bütçe Başkanlığı, On İkinci Kalkınma Planı (2024-2028) (2023), https://www.sbb.gov.tr/wp-content/uploads/2023/12/On-Ikinci-Kalkinma-Plani_2024-2028_11122023.pdf.*

[46] *İklim Değişikliği Başkanlığı, Güncellenmiş Birinci Ulusal Katkı Beyanı sunuldu, April 13, 2023. https://www.iklim.gov.tr/guncellenmis-birinci-ulusal-katki-beyani-sunuldu-haber-1139.*

[47] *İklim Değişikliği Başkanlığı, Türkiye Cumhuriyeti İkinci Ulusal Katkı Beyanı (NDC 3.0) (2025), https://iklim.gov.tr/db/turkce/icerikler/files/%C4%B0kinci%20Ulusal%20Katku%20Beyan%C4%B1%20(NDC%203.0)_TR.pdf.*

[48] *Türkiye Cumhuriyeti Enerji ve Tabii Kaynaklar Bakanlığı, Yenilenebilir Enerjide 2035 Yol Haritası, 2024, https://enerji.gov.tr/haber-detay?id=21380.*

[49] *Ibid.*

Ambitious renewable energy targets notwithstanding, fossil fuels are also regarded as a pillar of energy security, with major plans underway to boost exploration and production for natural gas and oil.[50] The strategy also calls for preserving power generation capacity from local lignite and hard coal and related coal mining to bolster energy security.[51]

As the EU is Türkiye's leading trading partner, government offices and industry associations have been actively involved in policy making in response to the European Green Deal. The Ministry of Trade, the Directorate of Climate Change (under the Ministry of the Environment, Urbanization and Climate Change), and the Ministry of Industry and Technology are all closely engaged, as are the Turkish Industry and Business Association (TÜSİAD) and producers' associations, especially those representing CBAM-affected industries. Türkiye's first Green Deal Action Plan was published in 2021 under the coordination of the Ministry of Trade.[52] Green Deal working groups were formed in 2019, and coordination meetings continue to lay the groundwork for the revision of the Action Plan.

Since then, a study was published on CBAM impacts and potential mitigation through a national carbon-pricing mechanism[53], followed by sectoral low-carbon pathway roadmaps (Ministry of Industry and Technology, 2024) produced with analytical and technical support from the European Bank for Reconstruction and Development (EBRD). Technical work is underway to set up a national emissions trading system (ETS) under the Climate Law that took effect in July 2025.[54] The law stipulates that strategies, national and local plans, obligations, allowances and other preparations will be completed by end-2027 (extendable to end-2028), with a pilot ETS phase set to start in 2027.[55]

4.2. Carbon accounting and product traceability

Türkiye passed legislation for monitoring, reporting and verification (MRV) of GHG emissions in 2014, and reporting started the following year.[56] The MRV legislation, mainly based on the EU system, establishes an installation-level system for recording carbon-dioxide (CO_2) emissions from about 770 industrial or power-plant sites. These entities span energy (with total rated thermal input above 20 megawatts) and various industries (iron and steel, metals, cement, glass, fertiliser, aluminium, lime, mineral fibre, brick, plaster, ceramic products, insulation materials, pulp and paper, refining and chemicals) above specified threshold sizes and production levels.

The system covers about half of the country's aggregate emissions, with the Directorate of Climate Change confirming annual monitoring plans for each site. Annual emission reports and the underlying data from each entity require independent annual third-party verification. The Turkish Accreditation Agency (TÜRKAK) is the national institution that accredits these verifiers.[57]

The existence of a well-established national MRV system that covers all CBAM-affected sectors gives Turkish firms a considerable advantage in adapting to the new EU reporting requirements.

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[50] *As of 2023, imported fossil fuels constitute 79% of Türkiye's primary energy supply while the share of locally produced fossil fuels is 3% and the share of renewable resources is 18%.*

[51] *Türkiye Cumhuriyeti Enerji ve Tabii Kaynaklar Bakanlığı, Türkiye Ulusal Enerji Planı (2022), https://enerji.gov.tr/Media/Dizin/EIGM/tr/Raporlar/TUEP/T%C3%BCrkiye_Ulusal_Enerji_Plan%C4%B1.pdf.*

[52] *Türkiye Cumhuriyeti Ticaret Bakanlığı, Yeşil Mutabakat Eylem Planı (2021), https://webdosya.csb.gov.tr/db/dongusel/icerikler/turkye-yes-l-mutabakat-eylem-plan--20220615123955.pdf.*

[53] *EBRD et al., Potential Impact of the Carbon Border Adjustment Mechanism on the Turkish Economy (2023), https://iklim.gov.tr/db/turkce/haberler/files/20230523%20Impacts%20of%20CBAM%20on%20Turkiye%20phase%202%20report%20FV3%20(2)-sayfalar-1,3,5-16%20(1)%20(1).pdf.*

[54] *Iklim Kanunu (2025), https://www.resmigazete.gov.tr/eskiler/2025/07/20250709-1.htm.*

[55] *The president will have the power to postpone implementation by one year.*

[56] *Sera Gazı Emisyonlarının İzlenmesi ve Raporlanması Hakkında Tebliğ, (2014), https://www.resmigazete.gov.tr/eskiler/2014/07/20140722-5.htm.*

[57] *International Carbon Action Partnership, "Turkish Emission Trading System - Factsheet 66," 2025, https://icapcarbonaction.com/system/files/ets_pdfs/icap-etsmap-factsheet-66.pdf.*

4.3. Readiness of the private sector

Private-sector readiness for Green Deal and CBAM implementation is hard to assess, due to Türkiye's diversity of firms and lack of specific metrics for readiness. An initial study by the Economic Policy Research Foundation of Türkiye (TEPAV) in 2022 – asking "How Ready Are Turkish Companies for the Green Transformation?"[58] – found that most had very limited knowledge of these mechanisms. Those findings followed online questionnaires with 68 respondents and in-depth interviews with 23 firms. The respondents and interviewees included aluminium, iron and steel, and cement producers. However, only half were exporters.

Education and training for CBAM and Green Deal adaptation became available from 2023 onwards, ranging from general introductory sessions of a few hours to week-long hands-on courses. Training materials are provided by the Ministry of Trade and industry associations such as the Istanbul Chamber of Commerce (ISO), the Union of Chambers and Commodity Exchanges of Türkiye (TOBB), the Türkiye Exporters Assembly (TİM), the Turkish Standards Institute (TSE), the Turkish Steel Exporters Association (ÇİB), and the Turkish Chemical Manufacturers Association, as well as by private-sector consultancy and training firms.[59,60]

The most heavily affected firms, such as producers of CBAM-covered goods, have responded proactively, working closely with the Ministry of Trade to solve problems arising from implementation. Trade and industry associations (particularly the Istanbul Chamber of Industry) have voiced concerns in meetings and working groups with relevant government bodies, such as the Metals Industry Technical Committee under the auspices of the Ministry of Industry and Technology (STB), while a detailed study by the Istanbul Policy Center (IPC 2025) outlines CBAM and trade-related issues for the iron and steel sector.

The main issues raised by industry representatives on the European Green Deal and CBAM compliance are as follows:

- Current CBAM rules may only be the tip of the iceberg, with more rigorous reporting and supply-chain requirements coming up, coverage expected to expand to a wider range of sectors, and other tariffs and anti-dumping measures being applied with increasing frequency to Turkish iron and steel and aluminium products.
- While EU-based steel operations can obtain support under the EU Just Transition Fund and Temporary Decarbonisation Fund, those in Türkiye cannot qualify for such support for steel decarbonisation.[61] Metal producers cite limitations on state aid for steel investments under the EU Customs Union framework and World Trade Organization (WTO) rules, reinforced by the 1996 Turkish-EU Free Trade Agreement.[62]
- Initiatives to limit the export of scrap metals from the EU, including changes to the EU Waste Shipment Regulation, could threaten the competitiveness of the Turkish steel sector. Türkiye relies on imported scrap for nearly half of its steel production, with the EU as a major supplier. Losing access to affordable, high-quality scrap, combined with CBAM requirements, could hurt both export competitiveness and domestic steel supply.[63]

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[58] *Murat Kenanoğlu and Selin Özokcu, Türk Firmaları Yeşil Dönüşüme Ne Kadar Hazır (2022), https://tepav.s3.eu-west-1.amazonaws.com/upload/files/1653382580-7.Turk_Firmalari_Yesil_Donusume_Ne_Kadar_Hazir.pdf.*

[59] *İstanbul Sanayi Odası, "İSO SKDM Çalışmaları,"https://www.iso.org.tr/projeler/iso-skdm-calismalari.*

[60] *Lebib Yalkın Akademi, "Sınırda Karbon Düzenlemesi ve Uygulamalı CBAM Raporlaması Eğitimi," Güncel Mevzuat, İçtihat ve Kanun, accessed March 31, 2026, https://lebibyalkin.com.tr/akademi/egitim/yesil-mutabakat-ve-surdurulebilirlik-egitimleri/sinirda-karbon-duzenlemesi-ve-uygulamali-cbam-raporlamasi-egitimi.*

[61] *Turkish Steel Producers' Association, "Presentation to the Metals Technical Committee," March 6, 2025.*

[62] *Türkiye - AKÇT Serbest Ticaret Anlaşması (1996), https://www.verginet.net/dtt/1/Turkiye-AKCTSerbestTicaretAnlasmasi_4177.aspx.*

[63] *Turkish Steel Producers' Association, "Presentation to the Metals Technical Committee," March 6, 2025.*

- National carbon pricing has become an additional source of uncertainty, entailing costs that most producers find hard to estimate. While proceeds from the proposed mechanism are meant to support decarbonisation investments in impacted industries, details are yet to be determined.[64]
- The initial CBAM reporting period (October 2023—December 2025) required extensive operational and product disclosures, raising concerns in both the public and private sectors about sharing privileged information on production processes that could then become known to competitors in the EU.[65]
- Despite excess capacity across the sector, many steel firms prioritise capacity growth for their survival, deferring decarbonisation investments and expecting short-term profits from domestic and non-EU markets.[66] Even so, customers increasingly demand carbon-content reporting, with or without CBAM certificates.[67]
- Access to finance is a major motivator for reducing carbon content, with international financial institutions increasingly expecting sustainability reports, as well as allocating specific funds for renewable energy and energy efficiency investments. The CBAM is recognised as an indirect incentive for projects like on-site renewable energy facilities. At the same time, limited access to finance is one of the main obstacles to Green Deal adaptation and decarbonisation.[68]

Green Deal and CBAM obligations are generally regarded as a burden imposed by external policies. Some firms, however, recognise the opportunity to enhance their resource efficiency, reduce their environmental impact, and upgrade their technological capacity.[69]

[64] *Turkish Steel Producers' Association, "Presentation to the Metals Technical Committee," March 6, 2025.*

[65] *Various one-on-one interactions with the producers and Ministry of Trade officials.*

[66] *Sabancı University Istanbul Policy Center, Türkiye Çelik Sektörünün Karbonsuzlaşması Politika ve Aktör Analizi (IPC, 2025), https://ipc.sabanciuniv.edu/Content/Images/CKeditorImages/20250828-13082830.pdf.*

[67] *Ibid.*

[68] *Ibid.*

[69] *Ibid.*

Nevertheless, developments throughout 2025 and early 2026 point to a turbulent period for developing country exporters with rising trade protectionism in developed countries.[70,71] Coupled with trade protectionism is the "Made in Europe" movement whereby member states broadly agree that the EU should re-shore the production of strategic goods and promote their uptake domestically[72] to strengthen competitiveness and accelerate transition and innovation within the European industries.[73]

In a similar vein, the discourse and actions surrounding CBAM increasingly focus on competitiveness of EU industries in addition to carbon leakage. A proposal is pending to extend the scope of CBAM by 2028 to downstream sectors (around 180 additional CN codes), including automotive, machinery/equipment and electrical appliances based not on their production processes but rather on the carbon content of their material inputs covered by the current CBAM. The extension is intended to protect local EU producers subject to carbon-priced inputs from foreign competitors that have access to inputs with no or low carbon pricing.[74] For metal products covered under CBAM, especially iron and steel, additional protective measures are proposed to reduce tariff-free quotas by 47% in comparison to 2024 and apply a 50% customs duty to imports above the quota and to steel goods not covered by the quota. Representatives of the EU aluminium industry have also called for an "effective trade policy to protect the European aluminium industry," which includes a section on "closing CBAM loopholes" specifically calling for inclusion of scrap content in carbon accounting.[75] All these measures, if adopted, could have serious consequences for Turkish exports.

4.4. Industrial transformation and long-term decarbonisation

Natural resource endowments, combined with the current structure of Turkish manufacturing and exports, reinforce the need for a green transition. Meeting the national target of net-zero emissions by 2053 would greatly reduce Türkiye's import-dependence for fossil fuels. Reducing carbon-intensive industrial processes and adapting to the CBAM could thereby enhance value creation, drive more sustainable economic development and align the country with the European Green Deal.[76]

At the same time, given close Turkish-EU trade relations, CBAM requirements could encourage the country to align its own decarbonisation and carbon-pricing policies with those of the EU.

Several measures could reduce the negative impact of EU carbon pricing on the Turkish economy and strengthen CBAM-affected sectors.

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[70] *Edith Hancock, "EU's Retaliatory Tariffs on U.S. Goods Could Kick in Feb. 7, Official Says," Business, Wall Street Journal, January 19, 2026, https://www.wsj.com/economy/trade/eus-retaliatory-tariffs-on-u-s-goods-could-kick-in-feb-7-official-says-363ef8cf.*

[71] *William F. Burkhat and Keigh E. Hammond, Presidential 2025 Tariff Actions: Timeline and Status, legislation no. R48549 (2025), https://www.congress.gov/crs-product/R48549.*

[72] *Louise Guillot, "Who Wants What in Europe's Race to Stay Competitive," 2026, https://www.contexte.com/eu/article/power/who-wants-what-in-europes-race-to-stay-competitive_254147.*

[73] *ECCO, "What Is the European Industrial Accelerator Act, What Does It Involve and Why Is It Needed?," ECCO, January 29, 2026, https://eccoclimate.org/what-is-the-european-industrial-accelerator-act-what-does-it-involve-and-why-is-it-needed/.*

[74] *Proposal for a regulation of the european parliament and of the council Amending Regulation (EU) 2023/956 as Regards the Extension of Its Scope to Downstream Goods and Anti-Circumvention Measures (2025),https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025PC0989.*

[75] *European Aluminium, European Aluminium Asks for an Effective Trade Policy to Protect the European Aluminium Industry, Position Paper (2026), https://european-aluminium.eu/wp-content/uploads/2026/02/9-02-2026-European-Aluminium-asks-for-an-effective-trade-policy-to-protect-the-European-Aluminium-industry.pdf.*

[76] *SHURA, Net Zero 2053: The Socioeconomic Impact of Transitioning to Carbon-Free Energy in Türkiye (2024), https://shura.org.tr/wp-content/uploads/2024/12/SHURA-2024-10-Net-Zero-2053-Socioeconomic_ENG.pdf.*

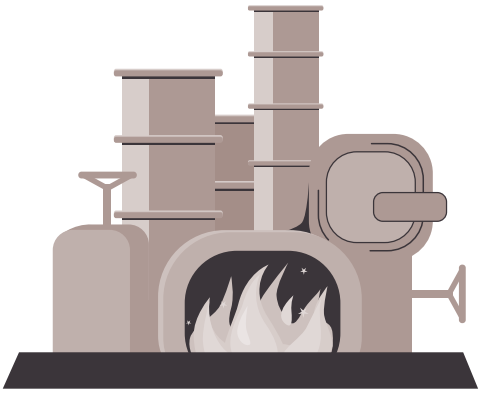
Firstly, introducing a national ETS would allow domestic carbon taxes to be deducted from CBAM obligations and recycled to fund decarbonisation investments in affected industries. A complimentary proposal explored by SHURA (2025) entails a comprehensive industrial transformation aimed at reducing carbon intensity and focusing on higher value-added production and exports. This approach also means raising the technology level of domestic industries, such as those producing fabricated metals, automotive parts and motor vehicles (including electric vehicles), machinery, electrical equipment and renewable energy technologies.

Over the medium and longer term, an industrial transformation concentrating on higher-technology sectors could add more value and reduce energy intensity. For instance, Turkish steel producers could explore the adoption of hydrogen-based direct reduced iron (hydrogen DRI), with hydrogen replacing coal or natural-gas–derived syngas to chemically reduce iron ore in a shaft furnace prior to melting by EAF to make steel. When powered by renewable electricity and green hydrogen (produced using renewables), this route can cut around 90% of CO_2 emissions compared to the traditional blast furnace–basic oxygen furnace (BF-BOF) route, according to the European Investment Bank (EIB).[77] Similarly, fertiliser producers could tap the significant decarbonisation potential of green hydrogen and green ammonia in to replace fossil-fuel feedstocks.[78]

Beyond mitigating CBAM impacts, this proactive approach could form the basis for sustainable economic, industrial and export development. Transformation policies would have to take account of existing supply-demand structure, strengthen Turkish integration into international value chains, and focus investment consistently on green competitive opportunities. Furthermore, support for primary and strategic industrial sectors could pave the way for new technology opportunities.

This transformation would be an integral part of a “New Inclusive Industrial Paradigm” proposed by SHURA in its report entitled “Industrial Policy Alternatives for Türkiye Within the Framework of a Just Transition”.[79] The paradigm extends beyond sector-specific growth, green objectives, or twin (green and energy) transition policies. Instead, it incorporates industry, transportation, finance, and trade policies that are consistent with sustainable development and growth.

This inclusive strategy offers considerable potential, both to boost Türkiye’s export competitiveness and ensure a just transition for affected workers and communities.



[77] *European Investment Bank (EIB), “H2 Green Steel,” European Investment Bank, 2021, https://www.eib.org/en/projects/all/20200902.*

[78] *World Bank, Decarbonizing Ammonia and Nitrogen Fertilizers with Clean Hydrogen (2025), https://openknowledge.worldbank.org/server/api/core/bitstreams/5ca20e0e-a1c2-420b-8880-6f5455909128/content.*

[79] *SHURA, Industrial Policy Alternatives for Türkiye Within the Framework of a Just Transition (2024), https://shura.org.tr/en/industrial-policy-alternatives-for-turkiye-within-the-framework-of-a-just-transition/.*

Box 2. SHURA's industrial transformation scenario

SHURA developed an industrial transformation scenario – or Transformation for short – through a simulation exercise, specifically highlighting the impact of a shift in the product composition compared to the business-as-usual (BAU) scenario for Turkish industrial production and exports. Transformation still does not involve major changes in production processes for existing products. Furthermore, the emission factor of each product is assumed to be the same across the two scenarios.

Ultimately, the Transformation scenario reduces emissions costs by reorienting key industries, changing their product composition and export volumes. While this means less value added from exports, it more than offsets this by reducing Türkiye's emissions costs, transport costs, and international trade deficit. The Transformation scenario, furthermore, generates sizeable benefits in forward-linkage industries.

Sectors subject to the CBAM are easy to recognise as strategic. Along with being carbon-intensive and hard to decarbonise, they produce inputs for other critical sectors that would be hard or impossible to substitute. The CBAM-affected sectors themselves could benefit from adjustments to their product composition, a more even balance of domestic production, imports and exports, and better integration with international value chains.

Sectoral decarbonisation roadmaps should realistically reflect resource limitations and consider total economic benefits, including emissions, transport and other export costs. The actions and investments proposed in Türkiye's current sectoral decarbonisation roadmaps could be revisited accordingly. Transformation policies for these key sectors could also serve to counteract negative impacts of restructuring, such as localised job losses.

At the same time, prioritising higher value-added products that reduce carbon intensity – as opposed to maintaining current product compositions and relying on steady growth rates – might partly mitigate the need for costly decarbonisation investments in CBAM-affected sectors. Additionally, prioritising domestic demand over exports would lower the international trade deficit, reduce transportation costs, and limit exposure to EU and potentially other carbon taxes. Price effects in forward-linkage industries could amplify net benefits across the supply chain.

Defining, enabling and planning this critical industrial transformation will require in-depth studies and analyses, as well as inclusive stakeholder consultations in the planning process.

Planning for the 2035–2040 period could incorporate strategic foresight on evolving international trade competition and the increasing adoption of carbon-pricing policies in the EU and other regions. Prompt and timely adaptation may prove essential for Türkiye to maintain its long-term trade competitiveness.

Until then, adopting domestic carbon pricing and ensuring national ETS implementation will only strengthen Türkiye's position in the EU market. Along with easing the burden of international carbon adjustment mechanisms, domestic carbon-tax revenues could help finance the country's own low-carbon transition.

Türkiye could also leverage international co-operation and financing opportunities such as climate finance, concessional loans, green/climate/transition bonds, and contracts for difference (CfDs) to stabilise low-carbon electricity revenues and de-risk the transition. In parallel, active climate diplomacy, outreach to EU policymakers, and collaboration with other CBAM-affected exporting countries could help achieve a fair distribution of decarbonisation and compliance costs.

5 Conclusions

Türkiye's current industrial structure – import-dependent, energy- and emissions-intensive, and heavily concentrated on low value-added products – limits export competitiveness. CBAM-related costs have made these limitations more visible.

With transport, trade-balance and emissions costs all taken into consideration, the total economic return on exports of CBAM-covered goods is currently negative, reinforcing the case for urgent restructuring.

Sectors subject to the CBAM are carbon-intensive and hard to decarbonise, yet strategically vital for the wider economy. Sectoral decarbonisation roadmaps need to reflect resource limitations and consider total economic benefits, including emissions, transport and other export costs. Transformation policies can help counteract negative impacts, such as local job losses. To ease CBAM adaptation in the short term, Türkiye could consider to provided targeted CBAM compliance trainings to exporters, shift the steel and aluminium industries towards higher-value added products, boost supply chain benefits through forward linkage, prioritise domestic demand and implement just-transition measures in the most exposed districts. Over the medium and long-term term, Turkish industries may consider decarbonising their supply chain and product mixes as well as integrate emissions reduction measures.

National ETS implementation will strengthen Türkiye's position in the EU market. Domestic carbon tax revenues could help finance the country's own low-carbon transition, while a national BCA (or "Turkish CBAM") could further reduce dependence on emissions-intensive imports.

The country can also leverage international co-operation and financing opportunities such as climate finance, concessional loans, green bonds, and CfDs to stabilise low-carbon electricity revenues and de-risk the transition. Financing needs add to the imperative of climate diplomacy and collaboration with other CBAM-affected exporting countries to push the EU for a fair distribution of decarbonisation and compliance costs.

For now, export costs of CBAM-affected products exceed total benefits for the country with or without carbon pricing. Turkish industries, therefore, urgently need restructuring. Enhanced intersectoral linkages, low-carbon trade policies, and sustainable long-term economic development could all come together in a holistic industrial transformation.

From an international perspective, this journey would also require effective international cooperation and climate diplomacy. Recycling CBAM revenues for decarbonisation investments in Türkiye, as well as mobilizing additional funds and establishing joint projects would enable a fair partnership for climate neutrality.

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