



INTERNATIONAL TRADE

The EU's Carbon Border Tax Will Redefine Global Value Chains

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Companies around the world that export to the European Union—the world's largest single market—are now on notice. After years of discussion and debate, the European Commission in late July unveiled its long-anticipated plans to make importers and non-EU manufacturers pay for the carbon emissions associated with the goods and materials they sell in the EU.

The carbon border tax has arrived. And the ramifications will be felt strongly both by companies outside the EU and by those within the bloc that buy or make industrial products.

The concept of “carbon pricing”—levying a charge for each metric ton of carbon dioxide emitted by industry—is well embedded in many countries’ climate and sustainability policies. But the EU’s carbon border adjustment mechanism, better known as a carbon border tax, is the first time pricing will apply equally to imports. As a result, the impact will reverberate through global value chains and could redefine the competitive balance between nations in many industries. It will also provide a renewed impetus for producers around the world to accelerate efforts to slash their carbon footprints.

“The concept of carbon pricing is familiar, but this is the first time it will apply equally to imports.”

When the tax is fully implemented in January 2026, the biggest initial impact will be on the cost of such high-carbon inputs as steel, cement, aluminum, chemicals, and electricity; EU importers and non-EU producers of these inputs will be required to pay an estimated €75 per metric ton of CO₂ emissions. This could increase the cost of materials made by more carbon-intensive producers, such as China, Russia, and India, by 15% to 30% overnight. And the effect will increase during subsequent years: the tax rate is projected to approach €100 per metric ton by 2030, and more products will likely fall within its scope at that point.

Although many details must still be ironed out over the next year, industry stakeholders need to act now because the bloc’s intent is clear. Companies have to measure their current emissions and carbon tax exposure across their supply chains and product lines, develop a resilient carbon strategy playbook, and identify opportunities to turn the climate challenge into a source of competitive advantage. And they should engage with EU decision makers to help shape the future of climate policy.

HOW THE CARBON BORDER TAX WILL WORK

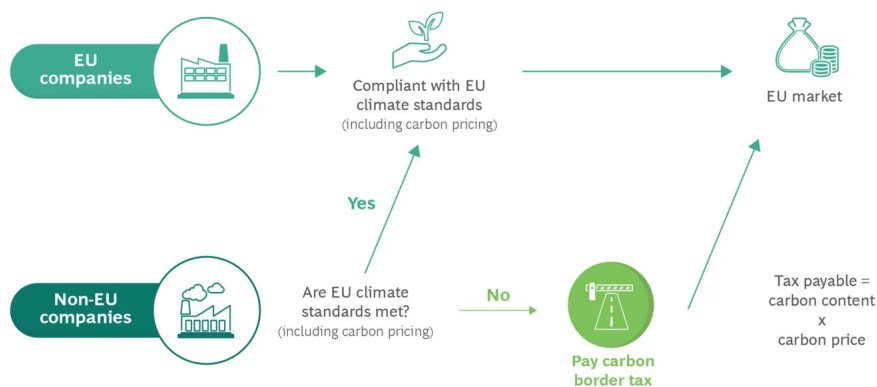
The carbon border tax is an integral part of a broader reset of the EU’s climate change policy, which was unveiled at the same time. To meet its ambitious climate targets for 2030, and achieve net-zero emissions by 2050, the EU must ramp up its efforts across manufacturing industries, buildings, and the transportation sector. For the bloc to meet these goals, it will need to rely heavily

on market-based measures—such as carbon pricing—aimed at making it less expensive for companies to invest in decarbonizing technologies than to continue emitting carbon.

“ The new emissions levy is an integral part of a broader reset of the EU’s climate change policy.

Many EU manufacturers have been paying for their carbon emissions since 2005 through the Emissions Trading System (ETS), which places annual caps on emissions and creates a carbon market for trading of emissions permits. This market then sets the carbon price, which is currently just over €60 per metric ton. The higher the carbon price rises, however, the more EU producers are put at risk of “carbon leakage”—losing out to cheaper imports from countries with less strict climate regulation. EU manufacturers have been receiving free carbon permits to compensate for carbon leakage. But these will now be phased out. Instead, the carbon border tax will be used to address this problem by reducing the attractiveness of offshoring as a means of avoiding EU climate costs.

Exhibit 1 - How the Carbon Border Tax Will Work



Source: BCG analysis.

Under the new policy, importers will be required to purchase carbon import permits for each metric ton of CO₂ brought into the EU through particular goods and materials. (See Exhibit 1.) The tax liability will depend on both the carbon intensity of the import and the tax rate per metric ton—which will be the same as the domestic carbon price paid by EU producers. To avoid double taxation, goods imported from countries that have domestic carbon-pricing regimes similar to the EU’s will be exempt from the levy, subject to agreement between those countries and the European Commission. The US, Canada, and other nations are also exploring mechanisms to tax carbon embedded in imports.

These proposals now must be negotiated with the European Parliament and the 27 EU member states. This will happen over the next six to eight months, and there will be opportunities during this time to amend the policy. Affected stakeholders should be ready to engage with national governments, industry associations, and members of the European Parliament as the policy is debated in Brussels and Strasbourg.

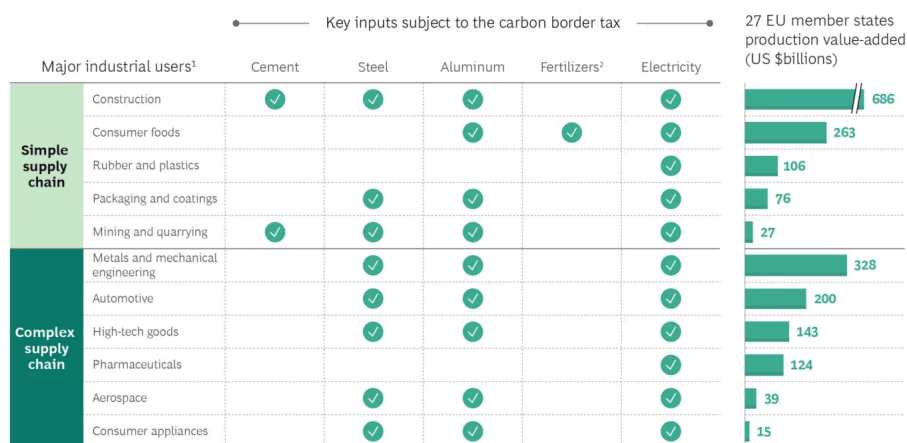
The tax will be implemented in stages. January 2023 through December 2025 will serve as a transitional phase. During this time, importers of steel, aluminum, cement, fertilizers, and electricity must calculate and report their emissions—but will not yet have to pay a carbon tax. In the second stage, which will commence in January 2026, companies will have to purchase import permits. The EU may also extend the scheme at this time to cover other products.

Even though the full financial impact won't hit until 2026, importers will start facing considerable administrative burdens in January 2023. They must develop mechanisms to calculate the emissions contained within their products and have this data independently verified. In addition, they will need to ensure that emissions are properly declared to the appropriate authorities. Importers will be held liable if they do not follow the rules.

ASSESSING THE IMPACT ACROSS INDUSTRIES AND COUNTRIES

The effect will be felt not only by non-EU producers and importers but also by EU industries that use the products that will be taxed. BCG's initial assessment of the impact suggests that it will fall most heavily on the supply chains of such industrial sectors as automotive, construction, packaging, and consumer appliances. These industries' costs for key inputs such as steel and aluminum will rise, and companies will need to take action to maintain competitiveness. (See Exhibit 2.)

Exhibit 2 - The Impact of the Carbon Border Tax Will Be Felt in Many Major Industries



Sources: Oxford Economics; Bank of Finland; BCG analysis.

¹The sectors listed are those designated by the EU as priorities for the carbon border tax.

²Includes ammonia and nitric acid, which are used in fertilizers.

BCG analysis suggests that an average four-door car, for example, contains around seven metric tons of embedded CO₂ emissions, just under half of which come from the steel and aluminum used in its production. If carbon prices approach €75 per metric ton by the time the border tax is fully implemented in 2026, the levy payable on steel and aluminum alone would be approximately €245 per metric ton. If the entire supply chain were included within its scope, the carbon border tax would exceed €500.

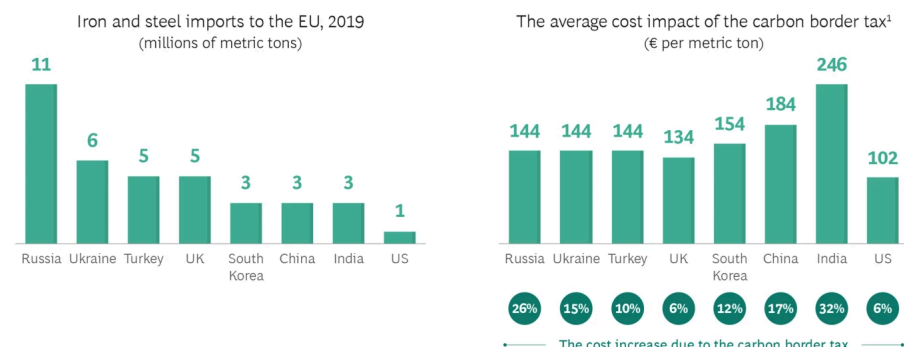
This cost impact will drive end consumers to change their purchasing behavior, which will affect the relative competitiveness of non-EU companies that export these products to the region. Less carbon-intensive producers will pay a lower tax rate, and their products will become more attractive in the EU market.

There are also implications for EU producers. As free carbon permits are phased out, these companies will have to pay the full carbon costs of the entirety of their production—including exports. This means they will compete in some non-EU markets with local producers that have not paid full carbon costs, leading to a potential cost differential. To address this issue, companies in some EU sectors, such as steel, have called for a carbon price rebate on exports. But the European Commission has not agreed.

An analysis of the relative carbon intensity of steel production in different countries illustrates the differential impact of the tax. Steel imported from more carbon-intensive producers will become proportionally more expensive than that from low-carbon manufacturers. While Russian steel exporters can expect to pay €147 per metric ton, for example, US steel producers will pay about

€103. Based on 2019 steel prices, the average percentage increase for producers in different nations could range from 6% to 32%. (See Exhibit 3.)

Exhibit 3 - The Cost of Steel Imported from Some Countries Could Rise Sharply



Sources: IHS Markit Global Trade Atlas; European Commission; Organisation for Economic Co-Operation and Development; BCG analysis.

¹Based on €100 (\$119)/metric ton of CO₂ and 2019 steel trade volumes and values.

The new policies will also pressure EU manufacturers to accelerate their own decarbonization journeys. One sector that will be particularly impacted is steel, which is responsible for around 200 million metric tons of CO₂ emissions a year. Give that EU steel producers will also face the phaseout of free carbon permits just as the new tax comes into force, the sector's domestic carbon costs will start rising sharply in 2026. Unless EU producers take further action to decarbonize, we estimate that carbon will cost the industry about €11 billion annually by 2030, assuming prices rise to the equivalent of €100 per metric ton by that point.

HOW COMPANIES SHOULD RESPOND






The carbon border tax is a major change that CEOs should prepare for now. While the details may be amended as it passes through the legislative process, there is a broad political consensus within the EU on the basic principle. Also, the EU has taken care to align its proposals with WTO rules on environmental taxes, to decrease the odds that any legal challenge will be successful.

The tax is complex and will affect producers, importers, and end users differently. (See Exhibit 4.) As a first step, impacted companies should thoroughly analyze their exposure. There are a number of possible strategic options available to help mitigate the impact, and the best approach will vary depending on each company's circumstances. Here are five ways to respond:

- **Pass on or share the costs.** If the impact is relatively small, companies might be able to pass the increase on to end customers—or renegotiate with suppliers to get them to split the cost.

- Use smart compliance.** An accurate calculation of the carbon emissions embedded in imports will be key. A variety of methodologies and processes for accomplishing this are available; companies should quickly determine which is most appropriate for them. The default option—a benchmark value determined by the EU—is likely to be the least advantageous in many cases.
- Re-source.** For end users, it is critical that carbon costs be embedded into procurement decisions. By establishing internal processes to measure the carbon impact of different options, manufacturers will be able to identify lower-carbon suppliers, whose products will therefore attract a lower carbon border tax. This might lead an EU automaker, for example, to shift to EU suppliers or non-EU producers of lower-carbon steel.
- Improve process efficiency.** Investing in more efficient industrial processes, or substituting higher-carbon materials with lower-carbon ones, will reduce the overall carbon footprint of a product—and therefore the tax’s impact. Establishing a CO₂ cost curve will help companies identify which investment options are viable given different carbon prices.
- Reshape the production footprint.** Consider whether the tax’s introduction changes the rationale for the current production footprint. Does offshoring still make sense once climate costs are equalized, for example, or is it better to bring some manufacturing back to the EU?

Exhibit 4 - Five Ways to Respond to the Carbon Border Tax

	Example	Applicability		
		Non-EU producers and importers	EU end users	EU producers
Low investment and impact				
 Pass on or share the costs	An EU car manufacturer importing steel negotiates with suppliers to split the increased carbon costs		✓	
 Use smart compliance	A non-EU steel producer builds monitoring and reporting capacity to demonstrate that existing installations are less carbon-intensive than the EU benchmark	✓		
 Re-source	An EU car manufacturer shifts steel procurement to suppliers within the EU and foreign ones with low emissions		✓	
 Improve process efficiency	A steel producer identifies key R&D investments within the value chain to achieve decarbonization	✓		✓
 Reshape the production footprint	An EU auto-parts maker relocates some manufacturing from high-emissions countries to those within the EU to ensure compliance with the Emissions Trading System		✓	
High investment and impact				

Source: BCG analysis.

SIX KEY STEPS TO WINNING THE REGULATORY SHIFT

Now that the basic framework of the EU’s carbon border tax has been set, companies both inside and outside the bloc need to become proactive in taking the measures needed to not only comply

—but also thrive—in the new regulatory environment. Companies should prepare today by taking these essential steps to assess the starting point, build a strategic toolkit, and shape the future:

- **Analyze the exposure.** Quantify how the carbon border tax will impact your company across the value chain in regard to revenue, cost, and assets.
 - **Understand the dynamics.** Examine the carbon footprint by product line to evaluate the relative exposure for your business, industry, and competitors.
 - **Identify the levers.** Determine a set of actions that your company can take to mitigate risks, lower costs, and gain advantage in the new competitive environment.
 - **Define a resilience strategy.** Establish priorities and “no regret” moves to strengthen carbon compliance, such as preparing for new reporting requirements.
 - **Anticipate scenarios.** Create a playbook of scenarios and align the leadership team on which actions to take under which conditions.
 - **Shape the policy.** While time allows, assemble evidence to inform the forthcoming legislative debate.
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While 2023 may seem like it’s still some time away, and many specifics still need to be clarified, companies should accept that the EU’s carbon border tax will quickly start to change the competitive dynamics in their industries and their entire value chains. Companies in the forefront of tackling carbon emissions will have a powerful strategic advantage in the new regulatory environment—and will have a head start as other nations adopt carbon-pricing mechanisms in the fight to mitigate climate change.

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