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Commentary

Potential Implications of the EU Carbon Border Adjustment Mechanism

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Key Points

From 2023 onward, the European Union's (EU's) Carbon Border Adjustment Mechanism (CBAM) will require importers to declare the embedded carbon emissions of electricity, iron, steel, aluminum, cement and fertilizers. The CBAM will ultimately transition into a carbon import tax, with the goal of resolving carbon leakages in the EU's emission trading system (ETS).[1] This transition, scheduled to begin in 2026, faces many challenges and unresolved questions, including how will accounting for indirect, or embedded, emissions be enforced? How will the verification and disclosure of data be achieved by countries that lack financial and technical support to build measurement, reporting and verification (MRV) systems? How can linkages be created across national carbon markets, and how can pricing be set to ensure that the CBAM is fair and balanced?

International positions and responses to the EU CBAM are divided between developed and developing countries, largely depending on their trade with the EU and carbon intensity in the global supply chain. As more countries commit to net-zero targets by midcentury, many are increasingly moving to consider, plan or pilot their own regional ETS. These efforts will enable the EU's trade partners to offset carbon import taxes and raise funds for their own national decarbonization strategies.

Ammonia will be the most impacted product exported by Saudi Arabia to the EU during the first stage of the CBAM. However, in the long run, when the technical and information limits are addressed, the scope of the CBAM could be extended to include refinery and organic chemicals. Saudi Arabia can align its Circular Carbon Economy strategy and clean hydrogen development plans with this EU climate policy. For example, it could consider implementing a national MRV strategy for exported products to value the embedded emissions in its exported products. A national carbon fund, based on a carbon export tax, could help Saudi commodities avoid having to pay carbon import taxes to the EU. Saudi Arabia can also use this fund to catalyze domestic investment in carbon capture and underground storage, the production of green hydrogen and renewable energies to achieve its zero-carbon commitment by 2060.[2]

Introduction

The Carbon Border Adjustment Mechanism (CBAM) is part of the European Union (EU) Green Deal, which was first announced in 2019. It represents another step in the EU's commitment to reducing greenhouse gas (GHG) emissions under the Paris Agreement, a legally binding international treaty on climate change developed by the United Nations Framework Convention on Climate Change (UNFCCC). The EU domestic climate policies, such as the EU Emission Trading System (ETS), put a price on direct GHG emissions in the EU.[3] The CBAM targets other indirect, or embedded emissions, of commodities imported into the EU.

The CBAM represents a measure to protect the competitiveness of EU industries as they transition to a lower carbon economy. This includes preventing a shift in the production of energy-intense commodities to countries with no, or less severe, carbon pricing

and emission constraints — also known as carbon leakage. The CBAM does not set emission reduction targets. It aims to create a level playing field in the cost of carbon abatement internationally. This is achieved by balancing the price paid for carbon emissions within the EU against the embedded carbon emissions in imported products not subject to carbon pricing.

The EU's temporary solution to the issue of carbon leakage was to provide EU producers with free ETS allowances until a more suitable solution could be implemented. A majority of EU legislators have voiced their support for the CBAM, which would replace this temporary fix and is compatible with the rules of the World Trade Organization (WTO) (Clough et al. 2021). The official proposal for the CBAM regulation was released in July 2021, and it has since been adopted by the European Commission (2021a). Legislation will be implemented over a staggered schedule, outlined in Box 1, covering electricity, iron and steel, aluminum, cement and certain fertilizers including ammonia (Watson 2021).

Box 1. CBAM transition schedule.

> A 3-year transition period will start in 2023, when importers will be required to report embedded emissions on a quarterly basis. This represents the number of CBAM credits they will be required to surrender. However, no price will be applied during the transition. Beginning in 2025, importers must register an official CBAM declarant and will be charged a penalty if quarterly CBAM reports are not submitted. This pilot will be followed by an accelerated transition period in 2026, when all Articles of the CBAM will come into effect. At this time, a price will be applied to CBAM credits in line with domestic carbon prices, and the EU ETS allowances for domestic industries will be phased out.

The plan summarized in Box 1 gives importers time to implement the necessary reporting systems. These include calculating carbon payments made in foreign countries to determine reductions when buying CBAM credits. Domestic industries will continue receiving free ETS allowances to correct for carbon leakage. These allowances will be phased out at the end of the transition when the prices paid under the CBAM should be proportional to those of the EU ETS. The EU Commission is expected to submit a proposal to extend the CBAM to additional goods before the transition period ends.

The CBAM is expected to face several technical and legal implementation challenges, which may include countermeasures by countries that trade with the EU. First, the EU must set clear guidelines on the measurement, reporting and verification (MRV) of the indirect, or embedded emissions, in imported products derived from multiple facilities in different jurisdictions.

The technical implementation challenges will be compounded by legal compatibility issues under the WTO border adjustment or non-discrimination rules.[4] The CBAM must avoid asymmetric pricing of emissions across international suppliers and EU producers. Ensuring fair and competitive pricing rules has been a major criticism of the CBAM both domestically and internationally.

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EU trade partners can use their own national carbon pricing mechanisms, or devise new domestic policies, to offset foreign taxation of their goods by the EU

Another issue is ensuring the interoperability of carbon markets and pricing in foreign countries that overlap with the CBAM. This is to ensure that the EU does not double charge for embodied emissions. EU trade partners can use their own national carbon pricing mechanisms, or devise new domestic policies, to offset foreign taxation of their goods by the EU. For example, they may establish a national carbon fund by applying a carbon tax on exported commodities.

Implementation and Design Challenges

The objective of the CBAM is "to promote a level playing field, in terms of embodied carbon, between internationally traded goods" (Blazquez, Dale, and Jefferiss 2020, p.4). However, existing agreements complicate the path forward and will require striking a balance in the international community between the interconnected issues of trade and climate.

There are three primary options for applying a carbon pricing adjustment to the import of energy-intensive commodities. First, a new carbon tax applied at the border. Second, registering importers under the EU ETS, where they will be required to buy and surrender emission allowances. Third, import tariffs on products from countries not pursuing climate policies in line with the Paris Agreement. The final CBAM proposal adopts the second option. This requires importers to report the embedded emissions in applicable commodities and surrender CBAM credits, along with the purchases of emission allowances from the EU ETS.

Embedded emissions are defined as direct emissions created during the production of goods at installations over which a producer has direct control (European Commission 2021a). The proposal explains that the CBAM applies to all direct GHG emissions from products before they are imported into the EU customs territory. However, the direct emissions of a producer that sends goods for export does not account for the embedded emissions of intermediate products, for example electricity, hydrogen and raw minerals like iron and aluminum ore.

While not covered directly, energy commodities could be impacted indirectly by the CABM as a primary intermediate input for complex goods

Annex III of the proposal describes the methods for calculating these emissions, defining products as simple or complex. The former involves only direct emissions, while a complex good includes the embedded emissions of intermediate products. The goods covered by the CBAM, such as aluminum, steel and fertilizers, represent complex products.

Companies must register CBAM declarants that provide MRV data for all direct GHG emissions generated upstream of the commodities supply chain. Depending on the interpretation or enforcement by the EU, this could include everything from the indirect emissions of electricity production to embedded emissions in the production of upstream fuels, including coal, oil and gas. While not covered directly, energy commodities could be impacted indirectly by the CABM as a primary intermediate input for complex goods.

Measurement and reporting are the responsibility of foreign facilities and should be openly disclosed during the sale of intermediate goods. Verifiers accredited under EU regulations (Articles 8 and 18) are required to authenticate embedded emission data sources. When verifiable data

cannot be provided, default values will be applied by the EU on products from a particular country, or values will be assessed using the average emission intensity of the EU's worst-performing facilities.

While the proposal attempts to simplify and clearly define the process, existing gaps in industrial MRV must be addressed. To ensure competitiveness, countries that export to the EU will need to implement national MRV strategies. Commodity producers that rely on intermediate goods from other countries may also need to coordinate with their suppliers.

A variety of systems and organizations, such as the GHG Protocol Corporate Accounting and Reporting Standard and the Task Force for Climate Financial Disclosures (TCFD), provide guidelines for reporting adopted by a growing number of organizations.[5] The Carbon Disclosure Project (CDP) has adopted the TCFD recommendations, which are used by numerous multinational companies involved in international trade that will need to comply with the EU's CBAM.[6] A TCFD survey reports growth in climate-related disclosures across 1,701 public companies from eight different industries (TCFD 2020). However, inventory reporting is still not the norm, with less than 30% of companies reporting actual carbon emissions, and even fewer reporting embedded emissions. To help address this gap, countries could consider establishing their own national disclosure requirements.

The GHG Protocol has released additional standards for measuring indirect emissions across value chains. However, according to the CDP, reporting value chain emissions is much more complex and auditing them for a single organization has not been very successful at achieving emission reductions (Patchell 2018). This is because value-chain emission reporting involves multiple facilities and requires a systematic approach for transparent tracking of emissions across organizations.[7]

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A simpler approach to measuring embedded emissions would be to apply a flat carbon tax to imported goods based on default values set by the EU. However, a flat carbon tax would be complicated under existing World Trade Organization (WTO) rules and would face pushback from the international community. For example, the EU proposal to apply a carbon tax on airlines originating outside the EU was suspended after receiving international pressure from a number of countries (Lang and Zhang 2014). Efforts to reduce carbon emissions without severely disrupting the global economy will require objective and verifiable measurement of actual emissions.

If the CBAM is found to violate border adjustment rules under the WTO, it may still be allowed under the exception for health and environmental measures (European Parliament 2020b).[8] This exception holds assuming there is no preferential treatment to domestic producers. Therefore, free EU ETS allowances must be phased out once CBAM payments are fully implemented (Box 1).

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A final technical challenge with measuring CBAM credits is applying discounts for carbon payments made outside the EU. For example, China's planned national ETS will have overlaps with the EU carbon market. One approach is to link national carbon markets, allowing surrendered allowances to be transferred across jurisdictions. The CBAM proposal suggests a more general approach,

where declarants report the total carbon payments made outside the EU, which are deducted from the value of CBAM credits to be surrendered by importers.

Snapshot of the Most-Impacted Groups

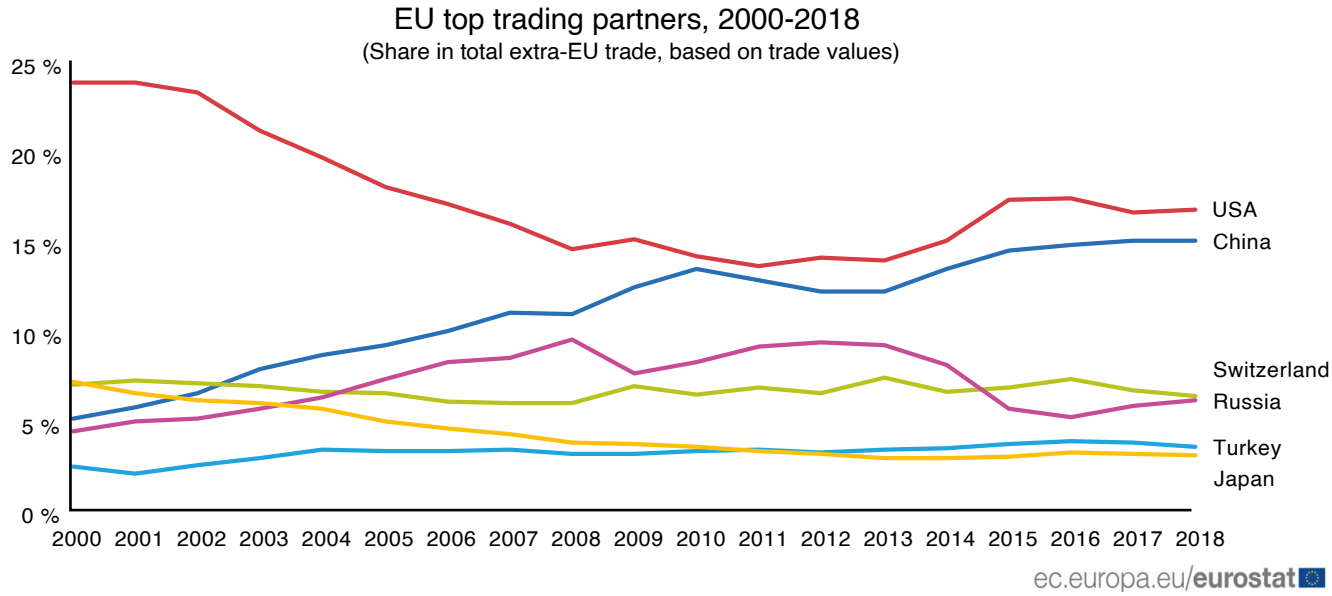
Developed countries that already have carbon pricing schemes and have trade agreements with the EU are more likely to accept the CBAM (European Parliament 2020a). This group of countries includes Canada, Chile, Japan, South Korea, New Zealand and the U.K. However, industries within the EU remain concerned about the impact of the withdrawal of free ETS allowances on the iron and steel, aluminum, cement, fertilizers and electricity generation sectors. The European Steelmaker Association suggested that the current ETS arrangements continue for a transition period of eight years after the CBAM is introduced; for example, delaying until 2030 to allow for the formation of a sustainable green steel market. However, the July 2021 CBAM proposal schedules a phasing out of free allowances starting in 2026.

When it comes to economic competitiveness, the rest of the world is far more concerned than it is welcoming of the EU CBAM, depending on their trade connectivity with the EU and carbon intensity in their supply chains.

The least developed countries (LDCs) account for a minor share of the EU's external trade in the commodities covered by the CBAM. Nevertheless, these exports can represent a significant share of the LDCs' national incomes. For example, aluminum products exported to the EU contribute 13% of Mozambique's GDP, and iron ore exports contribute 10–18% of Mauritania's GDP (Eurostat 2021). The implementation of the CBAM could impose economic risks for many LDCs, and it is perceived as an effort by EU policymakers to block their industrialization (Konrad Adenauer Stiftung 2021; Oharenko 2021; Simon 2021). Addressing the concerns of LDCs — for example, by reserving a set number of free allowances or earmarking a share of ETS revenue to support capacity building, technical assistance, technology transfer and decarbonization investment — should be as important in the design of CBAM as developing safeguard provisions to prevent carbon-intensive production shifts to these countries.

Major trading partners of the EU have voiced their concerns about the potential impact of CBAM on their economies. As the EU's largest trading partner (Figure 1), the U.S. has not officially announced its support of the EU CBAM. However, there is potential to develop joint measures under a new EU–U.S. agenda for global change. China has adopted a two-pronged response: internationally criticizing the legitimacy of the EU's CBAM but domestically hastening the construction and operation of a carbon pricing mechanism. Among the top five trading partners of the EU, Russia and Turkey have similar concerns about the economic costs. These costs are estimated at around €1.1–1.8 billion annually for Turkey (Asici 2021) and $3–60 billion between 2022 and 2030 for Russia (Astrasheuskaya and Khan 2021).

Figure 1. Top EU trading partners (2000–2018).



Source: European Commission (2021b).

Note: Share in total extra-EU trade, based on trade values.

Other developing nations, including Brazil, South Africa and India, have voiced criticism of the CBAM as a trade barrier (South African Government 2021). Their positions in the global supply chain are concentrated mostly in low-value and carbon-intensive goods, which would be significantly impacted by the tax.

However, a wave of change in favor of this policy could occur as a growing number of countries, cities and companies commit to their own net-zero targets by midcentury. According to the CBAM proposal, external carbon pricing will be accounted for to avoid double payment and criticism as a discriminatory tax (European Commission 2021a). Therefore, the EU's trade partners can offset external taxation of their exported goods through a national carbon market rollout. This will increase the need for linkages with the EU CBAM (or ETS) to achieve a more inclusive and integrated global "carbon conscious" economy with balanced carbon payments.

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China has launched what could become the world's largest carbon market. However, in terms of trading volume, it is still surpassed by the EU (Gong and Merle 2021). ETS pilots have been started or planned in both Indonesia and Thailand, and Vietnam has revised a law on Environmental Protection to develop a carbon market. In the Western Hemisphere, the U.S. Transportation and Climate Initiative released a draft Model Rule for an ETS. It adds to the Regional Greenhouse Gas Initiative (RGGI), which covers the electricity sectors of 11 states, and the California Air Resources Board (CARB) cap-and-trade program with linkages to Quebec, Canada. Mexico has begun a pilot ETS program, and Colombia aims to launch an ETS pilot program in 2024. The EU's largest neighbors have announced their own plans, including an ETS in Ukraine by 2025, a roadmap for regional carbon units in Russia announced in December 2020, and a draft legal framework for a pilot ETS in Turkey (World Bank 2021).

Response from the U.S.

Figure 2. U.S. carbon efficiency advantage over key trading partners, by sector.

	USA	Brazil	Canada	China	EU	India	Mexico	Russia
Chemicals & pharmaceuticals	1.0	0.9x	1.5x	2.6x	0.8x	2.1x	1.2x	5.5x
Rubber and plastic products	1.0	0.9x	1.0x	2.7x	0.7x	2.1x	1.1x	2.9x
Basic metals	1.0	1.3x	1.0x	1.8x	0.9x	2.7x	0.7x	3.7x
Fabricated metal products	1.0	1.3x	0.9x	3.1x	0.9x	6.1x	1.4x	4.8x
Computer, electronic and optical products	1.0	2.5x	2.3x	5.7x	2.1x	8.0x	3.4x	7.4x
Electrical equipment	1.0	1.5x	1.2x	3.1x	1.0x	3.9x	1.4x	4.8x
Machinery and equipment	1.0	1.0x	0.9x	2.8x	0.8x	4.0x	1.2x	4.5x
Motor vehicles and trailers	1.0	1.2x	0.9x	2.4x	0.7x	3.5x	1.0x	3.6x
Economy-wide	**1.0**	**1.1**	**1.3**	**3.2**	**0.9**	**3.8**	**1.4**	**4.2**

Source: Rorke and Bertelsen (2020).

The U.S. has been the largest annual trading partner of the EU for the last decade, except in 2020 when it was overtaken by China. U.S. exports of goods reached 11% of the EU's total imports in 2020, primarily in the chemicals, machinery and transport equipment categories. Compared with the rest of the world, the U.S. has a decisive "carbon advantage" throughout the economy. Based on a model of global supply chains, Rorke and Bertelsen (2020) find that the U.S. has a similar carbon efficiency to the EU and is three times more carbon efficient than China and nearly four times as efficient as India (Figure 2). The U.S. steel industry benefits from short production processes and abundant domestic natural gas supplies, giving it this carbon advantage. A domestic carbon fee and border carbon adjustment policy, applied in the context of the 2019 steel market, could increase the U.S. steel industry's margin by 32–41% and its value added by 45–52% (CRU International 2021).

Since the late 2000s, the idea of carbon border adjustments has been embedded in a series of proposals for federal emissions trading and carbon tax systems in the U.S. as a policy instrument for protecting domestic industry from foreign competition. Carbon pricing in the U.S. has so far only been introduced at the state level (e.g., CARB and RGGI cap-and-trade). A legally sound national carbon border adjustment is difficult to implement without an economy-wide carbon pricing mechanism. Policymakers continue to debate national carbon pricing in the U.S. across the political spectrum. Without a domestic carbon price, a carbon tariff would not be about carbon leakages, and it could be seen as a funding mechanism for U.S. domestic green investments. It is also unlikely during the Biden presidency for regulations introducing a cost on carbon for the industries that a U.S. CBAM would generally cover to be enacted (Tu, Sartor, and Zhang 2021).

President Joe Biden has pledged to achieve net-zero emissions by 2050, presenting an opportunity for the EU to develop joint CBAM measures under a new EU–U.S. agenda for global change (European Commission 2020). However, the final response of the U.S. would still depend on the design of the CBAM framework and the progress of its national carbon pricing scheme.

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Response from China

China's exports to the EU reached €383 billion in 2020, accounting for 22% of the EU's total imports. Its imports from the EU reached €202 billion, accounting for 10% of the EU's total exports (European Commission 2021b). However, the GHG emissions embedded in China's exports to the EU, estimated at around 270 million tonnes, are almost 10 times those estimated for the EU's exports to China (Wang et al. 2020). The introduction of the CBAM would likely have a profound impact on China's economy in the long run. In its initial stage, China's ferrous metals, non-ferrous metals and chemical products, which respectively account for 8%, 9% and 6.7% of the EU's total sector imports, would be most impacted (Marcu, Mehling, and Cosbey 2020). Overall, the value of China's total exports to the EU could decline by 6.8–11.6%, depending on the scope of the EU CBAM (Kuusi et al. 2020; Xie and Peng 2021).

China is taking two different approaches to deal with the EU CBAM. On international platforms, China has been resistant to the EU CBAM, arguing that it is contrary to the spirit of the UNFCCC. China is concerned that the CBAM will be used for protectionism rather than climate preservation. However, domestically China has been very active and ambitious in dealing with carbon emissions. Following President Xi's pledge to achieve peak carbon emissions by 2030 and achieve carbon neutrality by 2060, China has created a new wave of changes, with carbon reduction prioritized in every aspect of the economy and all national development plans. Two days after the EU released its official proposal on the CBAM, China officially launched its national carbon ETS, which is among several efforts to promote the use of low carbon energy.

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The expansion of China's national ETS from the electric power sector to other sectors also covered by the EU's CBAM could be one of China's best policy responses to this new trade mechanism. Linking the EU ETS with China's national ETS could address the EU's concerns about carbon leakage and loss of competitiveness. Meanwhile, it would also reduce the policy risks and additional costs faced by China's exporters (Kardish et al. 2021).

There are also discussions in China around pursuing export policy adjustments and resource shuffling. The aim of this would be to prioritize production of low carbon intensity commodities for export to the EU while retaining high carbon intensity goods for domestic and other international trading partners (Kardish et al. 2021; Marcu, Mehling, and Cosbey 2020). Although this approach could offer a quick solution, this would not help in achieving the long-term climate goals of the international community.

Implications for Saudi Arabia

Although Saudi Arabia is not one of the EU's major trading partners, they have strong economic ties. The EU is Saudi Arabia's second largest trading partner, with Saudi imports and exports valued at €25 and €17 billion, respectively (European Commission 2021b). In addition, the EU has a large surplus from trade with Saudi Arabia, mainly in chemical products, machinery and transport equipment. Saudi Arabia voiced its concerns about the EU CBAM policy at a WTO meeting, criticizing it as an attempt to stop investments from leaving the EU (Leeuwen 2021).

Saudi Arabia's exports to the EU are dominated by petroleum products — at around 80% of the total — with the rest being mainly chemicals and plastics (Eurostat 2021). Petroleum and chemicals exports were valued at €21.8 billion and €3.7 billion, respectively, in 2019, accounting for around 12% of Saudi exports in these two sectors (Eurostat 2021). These exports are essential for Saudi Arabia's economic diversification strategy to support investment in emerging industries.

Difficulties in attributing the embedded emissions of refinery and organic chemical production to the different outputs have prevented the inclusion of these products in the first stage of the CBAM. In the longer term, when the technical and information limits are addressed, an extension of the scope may be considered. The impact of this could be higher for Saudi industries than their EU counterparts. The EU's chemical exports to Saudi Arabia are more diversified, with basic chemicals, petrochemicals and polymers accounting for 43% and high-value specialty chemicals accounting for another 34% (Marcu, Mehling, and Cosbey 2020). In contrast, Saudi Arabia's chemical exports are mainly basic chemicals, including ethylene and propylene polymers, acyclic alcohols and ammonia — all of which have a higher carbon intensity in their production than derived products.

It is likely that the EU will expand the CBAM to address carbon leakage from petroleum imports in the future

The CBAM does not currently cover the import of petroleum feedstocks. However, it does apply to the embedded emissions of feedstocks used to produce other commodities. For example, ammonia fertilizers made from natural gas, Saudi Arabia's main EU export that will be covered by CBAM. As the EU ETS requires oil and gas companies to surrender emission allowances, it is likely that the EU will expand the CBAM to address carbon leakage from petroleum imports in the future.

Saudi Arabia is recognized as having a lower cost, and lower carbon intensity, hydrocarbon production process compared with international averages (Masnadi et al. 2018). Therefore, an extension of the CBAM to energy imports may create a strategic advantage for Saudi Arabia.

Tightening of EU climate policy regulation will advance the transition to low carbon energy for transport, impacting oil demand and prices as well as Saudi Arabia's dependence on oil export revenues. Saudi Arabia's economic diversification plan includes the Circular Carbon Economy (CCE) initiative, targeting four balanced emission management pathways: reduce, recycle, reuse and remove (KAPSARC 2020). The Oil and Gas Climate Initiative (OGCI) — of which Saudi Arabia's national oil company, Saudi

Aramco, is a member — identifies options for reusing carbon emissions as feedstock in synthetic fuel production or removing it by storing it in depleted reservoirs (OGCI 2021).

The CCE initiative targets the development of clean hydrogen fuel, including ammonia, as a carrier for commercial transportation (Braun and Shabaneh 2021). Saudi Arabia completed a pilot shipment of blue ammonia to Japan (Shabaneh, Al Suwailem, and Roychoudhury 2020), which involved reforming natural gas into hydrogen, combined with carbon capture and underground storage (CCUS) to offset emissions. Saudi Arabia's vast renewable solar energy potential can also be used to produce green hydrogen.[9] In addition to providing a clean energy source, hydrogen can be used for low carbon commodity manufacturing, such as refining iron ore into steel.

Coverage of ammonia-based fertilizers by CBAM creates an opportunity for Saudi Arabia to align its CCE and clean hydrogen development plans with EU climate policy. This could include establishing a national MRV strategy to comply with reporting of embedded carbon emissions for export to the EU by 2023, which could help secure its strategic carbon advantages in hydrogen production, with ammonia as an energy carrier. In line with the CBAM proposal, the government of Saudi Arabia could adopt a carbon fund to place a value on the embodied emissions of its exports to the EU. For example, collecting revenues through a carbon export tax on ammonia sales that would otherwise be collected by the EU.

Coverage of ammonia-based fertilizers by CBAM creates an opportunity for Saudi Arabia to align its CCE and clean hydrogen development plans with EU climate policy

Setting national MRV standards would support the certification of blue and green hydrogen, one of several factors influencing the CCE composite index proposed by Luomi et al. (2021). The fund could be used to catalyze investment in CCUS, green hydrogen and renewable energy. This may be useful as a tool to respond to future volatility and price spikes in the EU ETS, which will influence the carbon import tax and international suppliers.

Elements from existing national and sub-national carbon taxes or cap-and-trade programs can be considered in designing a carbon fund for Saudi Arabia. The scope of the industries and sectors included should be carefully selected, such as taxing exports versus all domestic production. It is also important to provide transparency and accountability around how revenues are allocated. For example, reducing other taxes and government debt, addressing household fairness and transition challenges, funding climate investments and not supporting the industries taxed by the fund.

A reliable reporting system should be established before payments are collected, in line with the gradual transition plan of the CBAM with taxes not enforced until 2026 (see Box 1). It is common to increase the stringency of a program gradually to allow businesses and consumers to adjust.

Conclusion

The economic implications of the EU CBAM depend on how broad and deep the MRV coverage is for the embedded carbon emissions of the products covered. The CBAM requires solutions to the technical challenges of MRV. This involves minimizing administrative costs and addressing carbon leakage from strategic reallocation of resources and shifting trade patterns.

Other political and legal challenges may also complicate CBAM implementation and progress toward embedded emission reporting, including efforts to derail the CBAM under WTO rules. Bilateral and multilateral agreements on international standards for the verification and transfer of carbon emission data could help address barriers around fairness of CBAM implementation.

The main motive for importers is to reduce exposure to CBAM payments relative to the default penalties set by the EU government. Countries that trade with the EU will benefit from introducing carbon management strategies to lower emission intensities and import taxes. While oil and gas products are not covered directly by the CBAM, they provide primary inputs for complex products covered by CBAM, including ammonia. This will impact major fuel suppliers, like Saudi Arabia. Embedded emissions data should be incorporated into commercial transactions linked to EU imports, allowing low carbon suppliers to realize their competitive advantage.

Setting up national carbon markets will help offset carbon import taxes to the EU and establish funds for domestic climate goals

Finally, setting up national carbon markets will help offset carbon import taxes to the EU and establish funds for domestic climate goals. This could help define Saudi Arabia's participation in an inclusive global "carbon conscious" economy and overcome local investment barriers. These markets would incentivize a sustainable and just transition in the long term by realigning policy frameworks and reforms for low-carbon development across economies. It will also help Saudi Arabia prepare for expansion of the CBAM and other indirect implications of the policy, such as embedded emissions accounting for complex products.

The next decade will reveal how the CBAM holds up against WTO scrutiny. As the EU has reached internal consensus on the CBAM, it will need to expand engagement with extra-EU stakeholders, both bilaterally and multilaterally, through the UNFCCC to address international scrutiny.

Endnotes

[1] Carbon leakage involves the transfer of carbon-intensive production to foreign countries with no or less strict carbon emission constraints and pricing.

[2] Green hydrogen is a carbon neutral fuel produced using renewable energy.

[3] The EU ETS is a cap-and-trade market that places a cap on direct GHG emissions within the EU. Industries receive both free allowance and can purchase and trade allowances in an auction.

[4] These WTO rules prevent countries from creating discriminatory trade policies, such as introducing a tax on imported goods that is higher than the tax applied to the equivalent domestic production.

[5] The TCFD includes recommendations on disclosing non-financial climate data, including actual emissions.

[6] THE CDP is a non-profit that helps establish business norms for the disclosure of environmental reporting and risk management, with offices in the U.K., Japan, India, China, Germany, and the U.S.

[7] An ongoing research project by KAPSARC is investigating the design of cross-organizational reporting for supply chain emission tracking.

[8] The environmental exception would be more difficult to justify for a flat carbon tax that does not acknowledge efforts by foreign producers to reduce emissions, or with the ETS giving preferential treatment to domestic industries.

[9] Green hydrogen is produced using renewable energy to split water through electrolysis, which creates significantly lower GHG emissions.

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About the Project

Saudi Arabia has introduced the Circular Carbon Economy (CCE) concept as a holistic approach to managing the carbon cycle and address climate change. The digital carbon accounting project explores how digital tools can support the measurement reporting and verification of carbon cycles. It focuses on improving transparency of carbon footprints metrics across commodity supply chains to promote and enable efforts to value carbon management within a global CCE.

About KAPSARC

The King Abdullah Petroleum Studies and Research Center (KAPSARC) is a non-profit global institution dedicated to independent research into energy economics, policy, technology and the environment, across all types of energy. KAPSARC's mandate is to advance the understanding of energy challenges and opportunities facing the world today and tomorrow, through unbiased, independent, and high-caliber research for the benefit of society. KAPSARC is located in Riyadh, Saudi Arabia.

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