

# Border Carbon Adjustment Mechanisms and Impacts on Vietnam

IISD REPORT



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### **Border Carbon Adjustment Mechanisms and Impacts on Vietnam**

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# Table of Contents

<b>1.0 Introduction to Border Carbon Adjustments</b>	<b>1</b>
1.1 What Are BCAs?	1
1.2 Challenges of BCAs and International Cooperation	3
<b>2.0 Impacts of BCAs on Vietnam</b>	<b>6</b>
2.1 The Context of Vietnam	6
2.2 Impacts on Sectors Currently Exposed to BCAs	6
2.3 Impacts on Other Sectors Potentially Exposed to BCAs	11
<b>3.0 Responses to BCAs by Vietnamese Stakeholders</b>	<b>14</b>
3.1 From the Government	14
3.2 From Industry	18
3.4 From Academia	24
<b>4.0 International Principles and Best Practices</b>	<b>26</b>
4.1 The Principle of Common but Differentiated Responsibility	26
4.2 The Extent of Carbon Footprint Traceability and Measurement	28
4.3 The Extent of Coverage of BCA/CBAM Measures	28
4.4 Administrative Burden	29
4.5 Technical Assistance and Technology Transfer	29
4.6 International Dialogues and Cooperation Platforms to Facilitate Convergence in BCA Design	30
<b>5.0 The Way Forward</b>	<b>31</b>
<b>6.0 Conclusion</b>	<b>32</b>
<b>References</b>	<b>33</b>



## List of Figures

Figure 1. Top 10 export markets of Vietnam steel in 2022 .....	8
Figure 2. Top cement-producing countries in 2022.....	10
Figure 3. Exports of Vietnam cement to the EU from 2019 to August 2023 .....	11
Figure 4. Who has contributed most to global CO <sub>2</sub> emissions? .....	27
Figure 5. Carbon traceability.....	28

## List of Tables

Table 1. The estimated impacts of EU's CBAM regulation (as of March 2023) on Vietnam in 2030 for key sectors.....	18
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## Abbreviations and Acronyms

<b>ASEAN</b>	Association of Southeast Asian Nations
<b>BCA</b>	border carbon adjustment
<b>CBAM</b>	Carbon Border Adjustment Mechanism
<b>EITE</b>	emissions-intensive trade-exposed
<b>ETS</b>	Emissions Trading System
<b>EU</b>	European Union
<b>GDP</b>	gross domestic product
<b>GHG</b>	greenhouse gas
<b>IFC</b>	International Finance Corporation
<b>LDC</b>	least developed countries
<b>NDC</b>	nationally determined contribution
<b>OCB</b>	Orient Commercial Bank
<b>SME</b>	small and medium-sized enterprises
<b>UOB</b>	United Overseas Bank
<b>VSA</b>	Vietnam Steel Association
<b>WTO</b>	World Trade Organization



# 1.0 Introduction to Border Carbon Adjustments

Border carbon adjustments (BCAs) have become a hot topic in trade and environment policy circles. The proximate reason is the European Union's (EU's) Carbon Border Adjustment Mechanism (CBAM) coming into law in May 2023. But the underlying reasons are more fundamental. As the science of climate change becomes more unequivocal, the impacts of climate change are being increasingly felt, and the cost of low-carbon technologies comes down, governments are under increasing pressure to act. As one indicator of those trends, in 2019, there were practically no net-zero pledges on the books in any country, while today, national net-zero pledges are in place in countries accounting for 88% of global greenhouse gas (GHG) emissions and 92% of global GDP (Net Zero Tracker, 2023). Forty of those countries have put their pledges into binding law.

As countries ramp up their climate ambitions, some will impose costs on producers in emissions-intensive trade-exposed (EITE) sectors. If they do, they will be forced to consider how to protect those sectors from carbon leakage.<sup>1</sup> With no plan to address carbon leakage, policy-makers risk the political fallout from fostering deindustrialization rather than decarbonization. BCAs are one of only a few tools dedicated to this end, so it will be increasingly considered.

## 1.1 What Are BCAs?

### 1.1.1 Levelling the Playing Field

BCAs, at a general level, are put in place to make imported goods bear the same carbon costs that domestic goods must bear. They are usually aimed at EITE sectors such as steel, aluminum, cement, fertilizers, plastics, and chemicals, and within those sectors, the focus is upstream at basic and semi-processed materials (Centro de Estudos de Integração e Desenvolvimento, 2024). Those energy-intensive, domestically produced goods will feel the pinch of any carbon pricing, but since they are trade-exposed, their producers will find it difficult to pass along any carbon costs to consumers, since international competitors may not face similar costs.

That prospect risks carbon leakage, which can happen through firms relocating to other jurisdictions, through losing market share to foreign producers, or through diverting greenfield investment to other jurisdictions. Evidence is mixed on the existence of carbon leakage at present, but it is widely agreed that as carbon prices become more meaningful, the risk of leakage will increase.

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<sup>1</sup> Carbon leakage indicates an increase in GHG emissions in other jurisdictions in response to climate policies in an implementing jurisdiction.





## 1.1.2 Two Basic Types of BCAs

BCAs are not stand-alone mechanisms; they are designed to accompany some underlying climate policy. Depending on the nature of that policy, they can take two basic forms:

- If the underlying policy is a carbon tax, a BCA would function like a border tax adjustment, in most respects acting similarly to the value-added tax adjustment used by many countries.
- If the underlying policy is a regulation, such as a requirement to purchase emissions allowances under an emissions trading scheme, a BCA would seek to mirror the domestic regulation with a regulation affecting imports—for example, requiring that they also purchase emissions allowances.

These two basic forms give rise immediately to a host of World Trade Organization (WTO) legal questions that will not be explored here. There are excellent resources that explore the ways BCA might be treated under the WTO's General Agreement on Tariffs and Trade, which is applicable to taxes and regulations, and the Agreement on Subsidies and Countervailing Measures, which is applicable to tax rebates for exports.<sup>2</sup>

## 1.1.3 The BCA Decision Tree

Even within the basic two types of BCAs, there are many possible variations of the final result. BCAs are less like a single policy and more like a decision tree, with the final result depending strongly on choices made about policy options during the elaboration process. Some of the basic choices include the following:

- Will it only assess a levy on imports, or will it also rebate carbon costs to exports?
- What goods/sectors will it cover? How far up and down the value chain will it extend in covered sectors?
- How will embodied emissions be estimated at the border? Using actual data? Assumed defaults? If the latter, can the defaults be challenged?
- What GHG emissions will be covered? Possibilities include direct emissions (Scope 1), emissions from purchased electricity (Scope 2), or various types of Scope 3 emissions (e.g., from purchased input goods or transport of goods).
- What price will be put on embodied emissions?
- Will the BCA exempt states from coverage based on national-level criteria like climate ambition or development status?
- Will the BCA charge be lowered to account for a carbon price paid in the country of export? What about non-price-based climate policies?
- What will be done with the revenues? Will any be transferred to the affected countries or producers?

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<sup>2</sup> See, for example Espa et al., 2022; OECD, 2020, Section 3.1.2.



The underlying climate policy instrument will determine many of these policy choices. For example, if the instrument only covers direct (Scope 1) emissions, then the likely choice for a BCA would be to cover the same emissions.

Other choices might be determined by the objectives that states have for implementing BCA. Possible objectives include

- preventing leakage,
- protecting the competitiveness of domestic producers, and
- forcing other countries to strengthen their climate policies to reduce emissions.

For example, if the objective were simply to force other countries into greater ambition, then there might not be a rationale for export rebates, but such rebates would likely be needed if the objective were protecting competitiveness.

### 1.1.4 Judging BCAs

It is impossible to say in the abstract whether BCAs are effective, fair, and legal; this can only be done in the context of a specific BCA. The answers will depend fundamentally on how the BCA in question finally manifests due to the types of choices described above.

The implication is that BCAs could be designed as instruments in line with national and international legal obligations that focus on environmental protection, but they also have the potential to be protectionist instruments that focus on unfairly and illegally disadvantaging foreign producers.

## 1.2 Challenges of BCAs and International Cooperation

BCAs present fundamental challenges both to countries contemplating using them as a policy tool and to countries facing the prospect of having such a tool used by their trading partners.

### 1.2.1 Countries Considering a BCA

Countries exploring the possibility of using a BCA face a full measure of technical challenges, including how to measure embedded carbon at the product level across different sectors, how to account for the effective carbon price paid in exporting jurisdictions whose carbon pricing regimes feature complexities such as offsets and allowances, and so on. There is also the challenge of adapting the basic form of BCAs to the legal, political, environmental, and economic realities to which the tool must be made appropriate.

At a higher level, the challenge is to craft a tool that balances a host of criteria that can be at odds with one another: effectiveness at reducing leakage, respect for trade law obligations, administrative feasibility, and respect for the development imperatives expressed in principles such as common but differentiated responsibilities and respective capabilities. Even more broadly, the challenge is to craft a tool that ultimately is about protecting the environment as opposed to punishing foreign competitors.





Each of the basic design choices described above has points at which those challenges become concrete forks in the decision tree that will determine a different endpoint. To explore whether a BCA is an appropriate policy choice—and if so, what it should look like—countries need to consider the critical starting-point questions:

- What should be the objectives of a BCA regime?
- What national-level sectoral, environmental, legal, and political realities should inform the elaboration of a BCA regime?
- What principles or best-practice guidance should guide the key choices designers make in elaborating a BCA regime?

## 1.2.2 Countries Facing Foreign BCAs

The challenges are different in countries that are facing the prospect of their trading partners adopting a BCA. As a starting point, they include how best to support their exporters in understanding and complying with BCA provisions with the least possible impairment to their competitiveness.

At a higher level, the challenges include how to influence the policy and design choices made by their trading partners and how to ensure that their realities and concerns are considered. As part of that challenge, a key question is how to help ensure that if there are multiple BCA regimes, their various institutions, measurement, and reporting protocols are not divergent, needlessly forcing exporters to conform to different requirements in regimes that have essentially the same objectives. Another challenge is deciding what norms to use in assessing and critiquing BCA regimes and proposals. Trade law offers one benchmark by which some aspects of a BCA regime can be judged, but on many important design questions, it is not particularly helpful.

Critical starting-point questions that each country should answer to address the possibility that trading partners will adopt BCAs are:

- What are the country's sectoral vulnerabilities to foreign BCAs? What are the potential impacts?
- What channels exist to influence the adoption or design of foreign BCAs?
- What principles or best-practice standards could be used as benchmarks to judge the design choices made by foreign designers in elaborating a BCA regime?

BCAs present fundamental challenges to both countries developing their own instruments and those affected by them. However, some elements of their design might benefit from much more active international discussions before individual BCA instruments take different approaches that would make international trade more challenging and costly and international relations even more tense than they currently are.



Topics could include the following:

- standards used for calculating embedded emissions,
- the scope of geographic BCA coverage and its exemptions,
- crediting foreign climate mitigation policies, and
- the use of revenues collected through BCA implementation.

While the list above is illustrative (but by no means not exhaustive), the international community needs to engage on this topic earlier rather than later to help shape future instruments in a way that ensures that their form meets their purpose in a way that is compatible with their government's international obligations and supportive of the global efforts to reach the Paris Agreement targets.



## 2.0 Impacts of BCAs on Vietnam

### 2.1 The Context of Vietnam

Vietnam's economy is growing rapidly (by 7.02% in 2019) and is transforming from an agricultural economy to a manufacturing and export-oriented economy at a remarkable pace (International Fund for Agricultural Development, 2019). As an export-oriented economy with a high degree of trade openness, Vietnam is vulnerable to trade shocks, especially from major trading partners such as the EU. As mentioned, while other countries are considering and discussing the potentiality of applying a BCA, the EU is the first region to initiate this mechanism to avoid carbon leakage and ensure its environmental commitments. The EU's CBAM entered into force in October 2023. The CBAM's initially affected goods are electricity, iron and steel, cement, aluminum, fertilizers, and hydrogen (Taxation Customs Union, 2023).

Considering the export sectors of Vietnam affected by the EU's CBAM, from 2017 to 2023, the average annual exports to the EU in total value and percentages of selected sectors are as follows: iron and steel account for approximately USD 1.1 billion (12%); aluminum accounts for around USD 48 million (7%); fertilizers have a small export volume of about USD 0.2 million per year to the EU; and cement accounts for around USD 12 million (1%) of the export value to the EU (WTO Centre, 2023c). In 2022, Vietnam exported approximately 8.397 million tonnes of various types of steel, with the export value reaching USD 7.99 billion. Among these, the main export markets for Vietnam in terms of export turnover were the EU and the United States, accounting for 18.37% and 10.57%, respectively (Vietnam Steel Association [VSA], 2023b). For the aluminum industry, the total export value amounted to USD 2,127.61 million in 2022, with approximately USD 307.66 million, equivalent to about 14.46%, exported to the EU (Vietnam Aluminum Profile Association, 2023). Additionally, Vietnam is a major producer and exporter of cement globally, with production capacity expected to exceed 100 million tonnes per year (Vietnam Cement Association, 2023). Cement was Vietnam's 44th most exported product in 2022: export values of cement equalled USD 1.54 billion, making it the second-largest exporter of cement in the world in 2022, after China (Observatory of Economic Complexity, n.d.). Steel, aluminum, and cement are the three key export sectors of Vietnam that may be affected by various BCAs, especially the current EU's CBAM.

### 2.2 Impacts on Sectors Currently Exposed to BCAs

This report will analyze the four sectors of Vietnam that are currently exposed to BCAs—iron and steel, cement, aluminum, and fertilizers, which are under the application of the EU's CBAM—and examine the potential effects of the CBAM on these sectors. Even though the period from October 1, 2023, to the end of 2025 is only a reporting period—without incurring any financial liabilities under the EU's CBAM—export-related activities from these sectors will still be affected by the mechanism. In addition to the cost of production, exporting enterprises also have to bear additional administrative costs for monitoring, reporting, and



verifying the carbon emissions in their products exported to the EU market.<sup>3</sup> Moreover, the effects of the CBAM on these sectors will serve as a foundation for the recommendations given in this report to help Vietnamese enterprises effectively deal with not only the EU's CBAM but also BCAs implemented by other countries in the future.

## 2.2.1 The Iron and Steel Industry

The steel industry in Vietnam holds a particularly significant position in the country's economic development toward industrialization and modernization. It is a foundational sector, providing input materials for vital economic sectors such as mechanical engineering, supporting industries, and the defence industry. In addition, the development of the steel industry strongly influences the process of economic restructuring and urbanization. It impacts various areas, including political security, national defence, and socio-economic stability within the country (Ha, 2023).

However, the steel industry faces numerous difficulties and challenges (Ha, 2023). The competitive capacity of Vietnam's steel industry remains relatively low, as the majority of raw materials for steel production need to be imported. Moreover, while new large-capacity steel mills are being constructed, existing steel billet production facilities mainly have small capacities, outdated equipment, and high energy consumption, as well as posing environmental pollution risks. Market conditions are volatile, with intense competition and surplus, along with trade remedies initiated by other trading partners affecting domestic steel prices,<sup>4</sup> leading to market instability. Specifically, in December 2022, the production of steel products reached 2.135 million tonnes, increasing by 16.95% compared to the previous month yet decreasing by 21.3% compared to the same period in 2021. Sales of steel products reached 2.159 million tonnes, increasing by 11.17% compared to the previous month but decreasing by 13.6% compared to the same period in 2021 (VSA, 2023a).

After the EU–Vietnam Free Trade Agreement entered into force on August 1, 2020, Vietnam's steel exports to the EU market have consistently shown growth. In November 2021, the steel industry entered the top list of export goods valued at USD 10 billion for the first time (Viet

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<sup>3</sup> Article 35(2) of the Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 Establishing a Carbon Border Adjustment Mechanism requires information that shall be included in the CBAM report accordingly:

“2. The CBAM report shall include the following information:

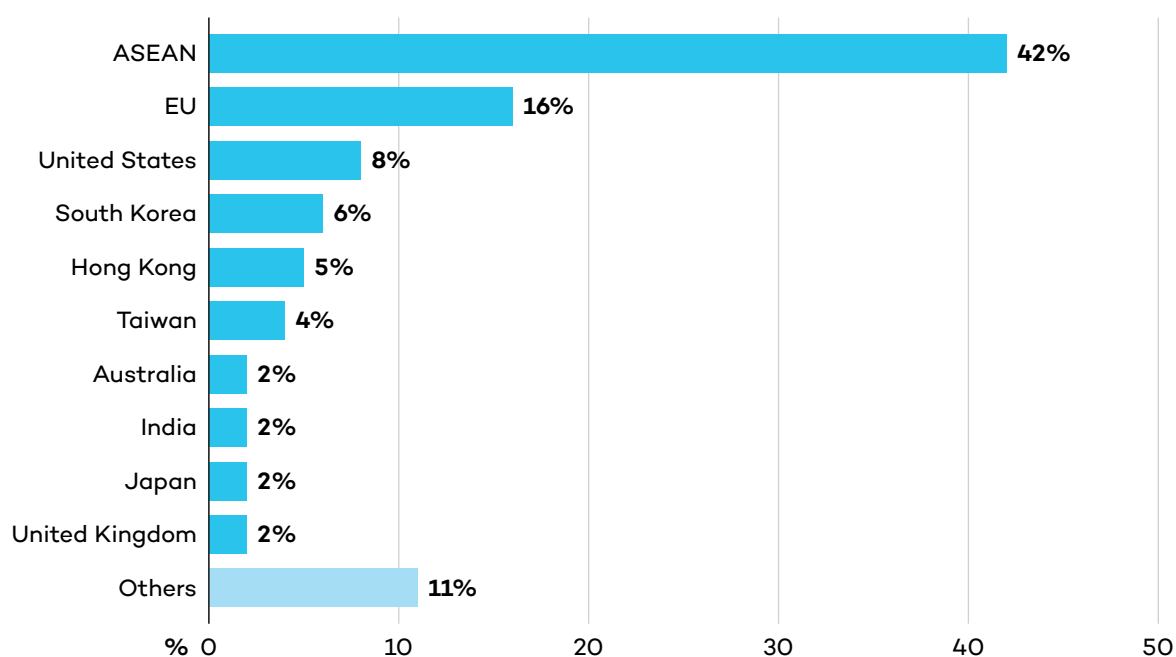
- (a) the total quantity of each type of goods, expressed in megawatt-hours for electricity and in tonnes for other goods, specified for each installation producing the goods in the country of origin;
- (b) the actual total embedded emissions, expressed in tonnes of CO<sub>2</sub>e emissions per megawatt-hour of electricity or for other goods in tonnes of CO<sub>2</sub>e emissions per tonne of each type of goods, calculated in accordance with the method set out in Annex IV;
- (c) the total indirect emissions calculated in accordance with the implementing act referred to in paragraph 7;
- (d) the carbon price due in a country of origin for the embedded emissions in the imported goods, taking into account any rebate or other form of compensation available.”

<sup>4</sup> According to the statistics from the Trade Remedies Authority of Vietnam, by the end of August 2023, steel exports from Vietnam had faced 234 trade remedy investigations from 24 countries. Among them, anti-dumping investigations were the most common (129 investigations), followed by safeguards (47 investigations), investigations to prevent the evasion of trade remedy measures (34 investigations), and subsidy investigations (24 investigations). (Industry and Trade Magazine, 2023c).



Hang, n.d.). Steel exports to the EU accounted for just 3.4% of the total steel exports in June 2020. However, after 2 years, this figure has increased to 20.51% (a sixfold increase). In the first 8 months of 2023, Vietnam exported 7.38 million tonnes of steel to the EU, a 24.4% increase compared to the same period the previous year (Chi Nhân, 2023). As described in Figure 1, in 2022, the main export markets of Vietnamese steel products include the Association of Southeast Asian Nations (ASEAN) (42%), the EU (16%), the United States (8%), South Korea (6%), Hong Kong (5%), and Taiwan (4%).

**Figure 1.** Top 10 export markets of Vietnam steel in 2022



Source: Data from Vietnam Industry and Trade Information Center, 2022.

As the second biggest importer of Vietnamese steel, once the implementation of the EU's CBAM is complete, imported steel products into the EU market will face challenges competing in this market if Vietnamese steel enterprises do not plan to reduce their carbon emissions in production.

According to Pohang and Steel Company (Posco)-Vietnam, the EU's CBAM will be a trade barrier and significantly affect the steel industry, requiring steel companies to cooperate and find methods to deal with the situation. Posco-Vietnam is aiming to achieve carbon neutrality by 2050. The company must reduce 50% of carbon emissions by 2040 to meet this goal. Even though the company is adopting an advanced technique that produces steel without using coal as a feedstock and uses hydrogen instead, Posco-Vietnam still affirms that it is a huge challenge to become carbon neutral by 2050 (Lê Thúy, 2023).

This challenge is not only a concern for Posco-Vietnam but also for the steel industry in general. The VSA also expressed its concern that if steel companies do not respond appropriately to the EU's CBAM, the volume of exports to the EU and the trade relationship with the EU regarding steel products will be negatively affected. However, Vietnamese steel



companies are still unsure about the measures that should be taken because the CBAM is a recent measure. The only method is to reduce the emissions, but it is a long-term solution, not a short-term measure. The VSA and steel enterprises are taking measures to assess the impacts of the EU's CBAM on the industry, research solutions, and create a roadmap to balance carbon emissions and steel production. Accordingly, from 2021 to 2025, the focus will be on optimizing processes, energy, raw materials, and technological advancements to reduce carbon emissions by 10% to 30%. From 2025 to 2030, low-carbon materials will be utilized, and the proportion of hydrogen in steel plants will be increased to 30% to catch up with the global trend. However, Vietnamese steel enterprises are not yet ready to deal with the CBAM. In addition to difficulties in reducing carbon emissions, even if Vietnamese steel exporters are aware of the implementation of the EU's CBAM, this is still a new policy and they do not have any prior experience in dealing with it. Therefore, there is a need for support from the Vietnamese government to help steel companies become familiar with the CBAM and provide consultations regarding effective methods to cope with the situation in a short period.

On the other hand, despite being a challenge, the CBAM is also a force driving the domestic steel industry toward green production. In the future, both the EU and other markets will tend to apply BCAs. Under the pressure to protect the environment, leading multinational companies tend to issue environmental standards to select providers, who also require Vietnamese companies to reduce carbon emissions to be part of their supply chains. Moreover, the Vietnamese government commits to achieving net-zero in 2050. Therefore, green steel production is inevitable in the long term for Vietnamese steel enterprises.

## 2.2.2 The Aluminum Industry

In Vietnam, the bauxite-aluminum industry has only been developing for over 10 years. Therefore, the current situation in the aluminum industry is still challenging, where market demand has significantly decreased and aluminum plants are running at below designed capacity, leading to cash flow depletion (Song Ha, 2023). In recent years, the aluminum industry's capacity has begun to experience oversupply. Over the past few years, on average, production has only reached 70% of the designed capacity, and the volume of goods produced far exceeds both domestic and export market demand. In Q1/2023, plants were operating at only 30%–40% of the designed capacity, primarily to sustain employment for workers, resulting in low revenue and challenging cash flow (Phòng vệ thương mại – Trung tâm WTO, 2023). In addition, aluminum imported from China currently accounts for a significant share of Vietnam's aluminum market. The cheap aluminum imports from China have affected domestic aluminum production and led to intense competition in the domestic market (H. Nguyen, 2023).

In 2022, aluminum exports reached over USD 2.127 billion, with exports to the EU accounting for over USD 307 million, representing 14.46% of the total, an increase of three times compared to 5% of the total in 2019 (H. Nguyen, 2023). As a result, it is estimated that the implementation of the EU's CBAM will decrease exports by more than 4% in value and 0.4% in quantity in 2030 (Nguyet Ha, 2024). Also, the green transition is still a big challenge for Vietnamese aluminum enterprises. It requires aluminum enterprises to strategize and adapt to new requirements for green transformation. Enterprises can



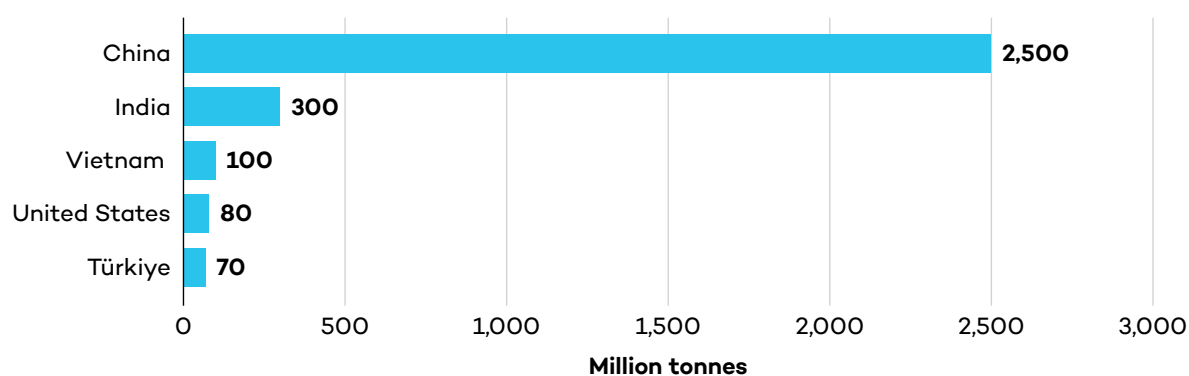


integrate clean energy into production to enhance the value of aluminum products, then increase commercial competitiveness and avoid carbon taxation, not only from the EU but also from future trading partners.

### 2.2.3 The Cement Industry

According to a report issued by the United States Geological Survey in 2022, Vietnam's cement production capacity reached approximately 100 million tonnes, ranking third globally. Specifically, the total cement consumption in the domestic market in 2022 amounted to 62.68 million tonnes, accounting for more than 62% of the total production. This figure remained unchanged compared to 2021.

**Figure 2.** Top cement-producing countries in 2022



Source: United States Geological Survey, 2022.

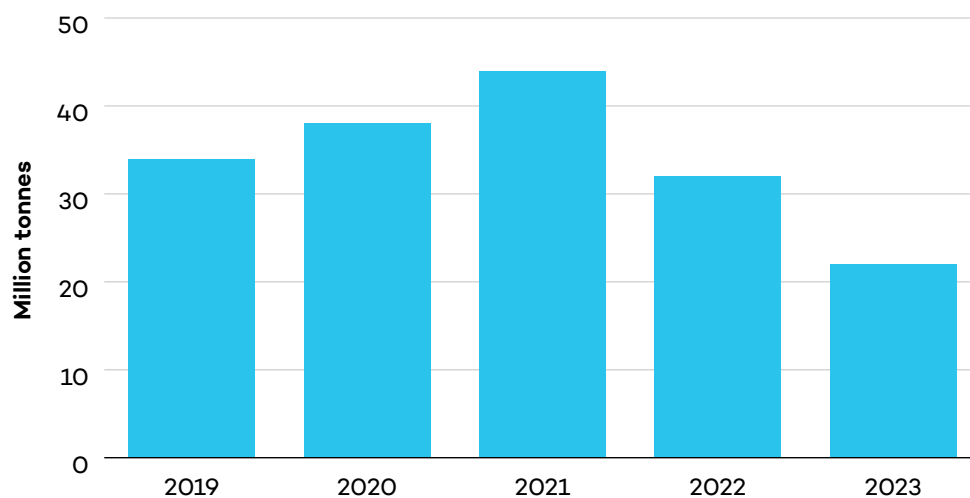
Currently, Vietnam has over 103 cement production lines within 63 plants with a total capacity of about 100 million tonnes per year. This number is expected to increase more with several ongoing projects. The industry's total designed capacity is expected to reach 123 million tonnes per year once these projects are completed (T. Nguyen, 2023).

However, 2023 is marked as the most challenging year for cement consumption in the over 120-year history of Vietnam's cement industry. The decrease in domestic consumption is due to a reduction in demand, a frozen real estate market, and a slight decline in public investment compared to the same period in 2022, while the designed capacity has increased (T. Nguyen, 2023). Exports also faced difficulties in the first 6 months of 2023. Cement exports in the first half of 2023 reached 14 million tonnes, a 15% decrease compared to the same period in the previous year.

Vietnam ranks among the five largest cement producers and exporters globally, leading to concern that the EU's CBAM might pose a new barrier to this industry. Nevertheless, the level of impact is insignificant as, over the past 5 years, exports of this construction material to the EU accounted for less than 2% of the total cement export volume (as illustrated in Figure 3). However, this industry is still required to transition to green production and reduce carbon emissions to not only deal with BCAs implemented by trading partners but also be consistent with the government's net-zero commitment by 2050.



**Figure 3.** Exports of Vietnam cement to the EU from 2019 to August 2023



Source: Vietnam Association for Building Materials, 2023.

## 2.2.4 Fertilizers

As of 2023, Vietnam had over 800 fertilizer production facilities. The domestic demand for fertilizer usage amounts to around 10.5 million tonnes per year, with approximately 7.6 million tonnes of inorganic fertilizers (Duong, 2023).

Even though Vietnamese fertilizer production facilities produce and export fertilizers, Vietnam has not exported fertilizer products covered under the CBAM (inorganic fertilizers) to the EU. Moreover, the export value of Vietnam's fertilizers to the EU is only roughly USD 0.2 million per year (Duong, 2023). Therefore, the implementation of the CBAM may not directly or significantly affect this industry. However, Vietnamese fertilizer enterprises still need to reduce GHG emissions during the production process to be well-prepared in case these are indirectly affected by the CBAM, given that they are part of a transnational fertilizer supply chain. For a long-term plan, reducing GHG emissions during the fertilizer production process can not only contribute to Vietnam's national emissions-reduction goal but also facilitate the export of any fertilizers to the EU in the future (Duong, 2023).

## 2.3 Impacts on Other Sectors Potentially Exposed to BCAs

As mentioned, under the current regime of the EU's CBAM, only four industry sectors of Vietnam could be affected while exporting their products to the EU market. However, in the longer term, a wider range of Vietnamese industry sectors might be exposed to the CBAM or similar BCA policies in two ways: i) the extension of the scope of the EU's CBAM and ii) the implementation by other countries of similar BCA policies.

First, regarding the extension of the scope of the CBAM, in the future, it could cover some other products and services that are subject to the EU's Emissions Trading System (ETS). Notably, the products and services covered by the current EU ETS, reinforced by the reform to increase its ambition in 2023, include over 30 activities and sectors (Annex I and III, ETS



Directive), including combustion of fuels in installations; oil refining; production of coke; production of metal ore; production of iron and steel; production and processing of ferrous metals; production of primary aluminum or alumina; production of secondary aluminum; production or processing of non-ferrous metal; production of cement clinker; production of lime or calcination of dolomite or magnesite; manufacture of glass; manufacture of ceramic products; manufacture of mineral wool; drying or calcination of gypsum; production of pulp; production of paper; production of carbon black; production of nitric acid; production of adipic acid; production of glyoxal and glyoxylic acid; production of ammonia; production of bulk organic; production of hydrogen; production of soda ash and sodium bicarbonate; capture of GHGs from installations; transport of GHGs; geological storage of GHGs; and aviation and maritime transport.

Notably, goods under the EU ETS that are not at high risk of carbon leakage may not be covered by the EU's CBAM. Some other industries at high risk of carbon leakage—for instance, plastics, organic chemicals, glass, and ceramics—are envisaged to be incorporated into the future EU's CBAM, regardless of their country of origin (Monkelbaan, & Figures, 2022). The CBAM would also ensure that importers of related imported products pay for the carbon emissions associated with their production or processing. This extension would incentivize enterprises to reduce their carbon footprint and encourage a transition to the use of low-carbon emission technologies.

Therefore, in addition to the current four sectors exposed to the CBAM, other Vietnamese sectors could be affected by the possible expansion of this policy in the future. These may include plastics, glass, and ceramics in particular.

Second, other countries might consider implementing the same policy as CBAM. For the time being, Canada, the United Kingdom, Japan, Australia, and the United States intend to apply BCAs in the future. Until now, their regulations related to this subject matter have not been promulgated, even though countries like the United Kingdom have published their draft regulations on the BCA for consultations. Therefore, it is not easy to foresee exactly the impact of these BCA policies on Vietnam's exports. However, published information allows us to share some findings below.

In the case of Canada, based on the formal public consultation completed in 2021, it was indicated that BCAs would be most relevant to the products made by EITE sectors, as they are the most at risk of carbon leakage (Government of Canada, 2021). These EITE sectors include oil and gas; mining; food and beverage; wood, pulp, and paper; chemicals; petroleum and coal products; motor vehicle and parts; primary and fabricated metals; plastics and rubber products; aerospace products and parts; non-metallic mineral products and transportation of natural gas (Government of Canada, 2021). Of Canada's total imported goods, 46.3% are products competing with EITE production in Canada, amounting to CAD 269 billion annually. Ten major Vietnamese export products to Canada in 2019 are electrical machines and equipment, footwear, clothing and textiles, machinery and mechanical equipment, furniture, seafood, leather and leather products, iron and steel, toys, games, and sports equipment. Therefore, some sectors that could be covered by Canada's future BCA and impact Vietnam would include iron and steel, furniture products, etc.



In December 2023, the British government indicated its intention to apply an equivalent to the EU's CBAM for products in sectors subject to the United Kingdom's ETS and at risk of carbon leakage. Targeted sectors in the consultation draft that the United Kingdom released include iron, steel, aluminum, fertilizer, hydrogen, ceramics, glass, and cement. Among Vietnam's major products exported to the United Kingdom, iron and steel products would first be affected by the United Kingdom's future CBAM (HM Treasury, 2023).



## 3.0 Responses to BCAs by Vietnamese Stakeholders

With the implementation of the EU's CBAM and other BCAs, the Vietnamese government, industries, and academics have different perspectives to share regarding the impacts of these BCA policies on Vietnam. In preparation for this Vietnam report on BCAs, two stakeholders' dialogues (SHDs) were held in Hanoi and Ho Chi Minh City on March 18 and April 20, 2024, respectively. The dialogues focused on presentations and roundtable discussions with different stakeholders (i.e., representatives from the government, industry, and academia) to solicit their analysis and views on opportunities and challenges generated by BCA mechanisms in general and particularly the EU's CBAM. The analysis outlined below demonstrates the main points of discussion during the two dialogues and information from official sources, news websites, and statements from experts from relevant departments and ministries of Vietnam.

### 3.1 From the Government

SHD participants from Vietnamese government agencies have assessed that BCAs have macroeconomic impacts on Vietnam. This section provides an overview of some general impacts to consider.

First, applying BCAs worldwide creates pressure to force the Vietnamese government to develop corresponding mechanisms, implement policies, and carry out specific actions to protect the environment and reduce GHG emissions. As such, the government needs to build mechanisms and policies, carry out investment activities in new technology, and develop instruments to foster domestic carbon pricing and a clean energy transition.

Second, once BCAs have been applied, Vietnam would be able to benefit from reduced social costs derived from reducing GHG emissions of large-emitting enterprises and production facilities.

Third, through the implementation of carbon pricing instruments, such as a carbon tax and other revenues from the carbon market, the government could benefit from increased revenue for the state budget.

Fourth, BCAs' application would help promote emission reduction in Vietnam, thereby contributing to the goal of reducing GHG emissions following Vietnam's nationally determined contribution (NDC), which aims for net-zero emissions by 2050.

In addition, the specific impacts of BCAs' application on Vietnam's policies and laws could be seen from two main angles.

#### 3.1.1 Existing Policies

SHD participants from some of Vietnam's government agencies indicated that in response to the BCAs, Vietnam fostered the completion of the legal basis to reduce GHG emissions,



carbon pricing, carbon market development, and carbon credit issuance. These serve as a premise to orient and promote industries and businesses that have expressed their willingness to effectively reduce carbon emissions.

Since 2012, Vietnam has actively participated in and prepared for the process of forming and developing the domestic carbon market, moving toward regional and world integration. When the global climate change response moved into a new phase, with the parties starting to implement the Paris Agreement in 2022, including contributions to reducing GHG emissions committed in the NDC, Vietnam completed its updated NDC and sent it to the Secretariat of the United Nations Framework Convention on Climate Change. Accordingly, by 2030, using domestic resources, Vietnam will reduce total GHG emissions by 9% compared to the national business-as-usual scenario, equivalent to 83.9 million tonnes of carbon dioxide (CO<sub>2</sub>). In recent years, Vietnam has entered the carbon market as a provider of emission reduction certificates and has made clear progress.

Participants also emphasized that the Law on Environmental Protection 2020, Decree 06/2022/ND-CP, and Circular 01/2022/TT-BTNMT have specified regulations to respond to climate change, reduce GHG emissions, and promote the development of the domestic carbon market. Accordingly, facilities with annual GHG emissions of 3,000 tonnes of CO<sub>2</sub> equivalent or more or falling into one of the specific cases<sup>5</sup> are all subject to a GHG inventory and must develop and implement a plan to reduce GHG emissions according to the allocated quota.

Decree No. 06/2022/ND-CP regulates GHG emission mitigation and ozone layer protection and has a specific development roadmap and timeline to deploy the carbon market. Specifically, in the period until the end of 2027, Vietnam will (i) develop regulations on carbon credit management, activities of exchanging GHG emission quotas and carbon credits; (ii) develop regulations for operating the carbon credit exchange and pilot the implementation of carbon credit exchange and offset mechanisms in potential areas, guiding the implementation of domestic and international carbon credit exchange and offset mechanisms per the provisions of law and treaties of international organizations of which Vietnam is a member; (iii) establish and organize the pilot operation of a carbon credit exchange from 2025; and (iv) implement capacity-building activities and raise awareness about carbon market development.

In addition, Vietnam has implemented projects under the Clean Development Mechanism in which Vietnamese businesses have received technology transfer and financial resources from exchanging and selling carbon credits.

Vietnam is also comprehensively transforming the domestic economy to achieve net-zero carbon emissions by 2050, using businesses in key sectors as the driving force for transformation. Decision No. 888/QĐ-TTg, dated July 25, 2022, of the Prime Minister approving the project on tasks and solutions to implement the results of the 26th Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change stipulates the tasks of prioritizing the implementation of carbon pricing tools, encouraging

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<sup>5</sup> These cases include thermal power plants; industrial production facilities with total energy consumption of 1,000 tonnes of oil equivalent (TOE)/year or more; road freight transport companies with total fuel consumption of 1,000 TOE/year or more; commercial buildings with total energy consumption of 1,000 TOE/year or more; and solid waste treatment facilities with an operating capacity of 65,000 tonnes/year or more.





investment in reducing GHG emissions in areas/industries, developing renewable energy sources, harvesting technology, and carbon storage and use.

Moreover, Vietnam has been implementing the National Strategy on Climate Change for the period up to 2050 under Decision 896/QĐ-TTg (Prime Minister of Vietnam, 2022). The tasks of reducing GHG emissions in industrial processes and the use of industrial products include

improving, developing, and applying technology in the production of construction materials; developing and using energy-saving construction materials and green materials in the housing and commercial sectors; implementing solutions for blast furnace slag grinding, fly ash grinding, Puzzolana grinding, and alternative limestone grinding, reducing the clinker ratio in cement production; applying high-temperature decomposition technology and new technologies to reduce N<sub>2</sub>O emissions in the chemical field; applying carbon capture technology in the fields of cement production, chemicals – fertilizers, and steelmaking; applying molten oxide electrolysis technology in the steelmaking field; using hydrogen to replace coke in “green” steelmaking from 2035. (Prime Minister of Vietnam, 2022)

Electricity, iron and steel, fertilizer, aluminum, cement, and energy industries have been selected as key priority sectors in implementing the solutions and measures to reduce GHG emissions that the strategy has proposed in the short and long terms.

### 3.1.2 Future Policies, as Suggested by Stakeholders

The analysis below is based on points of discussion suggested by the SHD participants and other sources of information in Vietnam.

Most of Vietnam’s existing policies target reducing GHG emissions in general and particularly in those sectors that are subject to BCA measures. Despite the possible negative impacts on Vietnam’s selected export industries in the short run, the CBAM also aligns with Vietnam’s vision for a macroeconomy oriented toward sustainable development with green industries at the core. In the medium to long term, it is envisaged that other trading partners may follow suit; hence, such BCA measures could stand as a motivation for Vietnam to transition its national export industries toward carbon reduction or elimination. In any case, reducing carbon emissions will help Vietnam cope with the CBAM and the like and enable the country to move forward in its national strategy on climate change to achieve its net-zero pledge by 2050. On such a basis, some additional policies could be envisaged.

First, supporting Vietnamese companies exporting products to trading partners implementing BCAs remains crucial. Vietnam could raise awareness and educate Vietnamese enterprises about the impacts of CBAM and the like, helping them to prepare and develop their internal strategies to deal with BCA measures right from the beginning stages. According to the CBAM Impact Assessment Project (Trung tâm WTO, 2023b), although European importers are responsible for reporting on and bearing CBAM fees, they will require Vietnamese manufacturers to provide information on product quantities, emissions in products, costs paid for domestic carbon pricing, etc. Currently, Vietnamese enterprises can only provide emission information about the production and processing of



goods; however, the CBAM requires emissions data information on both production and certain inputs from across the supply chain.

Second, Vietnam is encouraged to take further steps to negotiate and engage in constructive dialogues with the EU and other trading partners to clarify the scope or possible expansion of BCA measures to other exported goods from Vietnam. At the same time, negotiation and dialogues could also aim to set favourable conditions, provide detailed guidelines, and help strengthen the technical and institutional capacity of Vietnamese enterprises to adapt to the CBAM or other BCA measures.

Third, establishing a carbon pricing mechanism and carbon credit market could greatly facilitate the ability of the CBAM or other BCA measures to credit specific sectors where carbon prices have been paid during the production of imported goods. This condition, however, largely depends on the extent to which carbon prices have been paid. Enterprises will still have to pay the difference if the paid price is lower than the price of the EU ETS allowances. With a clear carbon pricing mechanism from third countries like Vietnam, EU importers can then deduct the corresponding amount equivalent to carbon prices from their final invoice once they can prove, based on verified information from manufacturers, that carbon prices have been paid in the exporting countries. In such a way, such an amount helps increase the national budget of exporting countries since the carbon tax that would have been paid to the importing country (e.g., the EU) could be retained in the exporting country (e.g., Vietnam); meanwhile, both exporters and importers could benefit because exports incur a lower carbon fee than, for example, the EU standard price. To date, Vietnam has been preparing to establish a carbon credit market to help realize the national strategy goals on climate change.

Fourth, it remains necessary for Vietnam to continue developing sustainable and green industries for a general long-term goal toward the achievement of net-zero commitments by 2050, as pledged by the Prime Minister during COP 26 (Dezan Shira & Associates, 2021). To materialize such a pledge, Vietnam has strived to develop decarbonization policies, including phasing out coal power, promoting renewable energy, and energy-saving policies. In particular, Vietnam has issued the Power Development Plan VIII (Giang, 2023), with a primary objective of transitioning to green energy. This latest Power Development Plan includes a structure of green energy sources that overwhelmingly surpasses coal power, demonstrating Vietnam's commitment to green initiatives. These government efforts could greatly help enterprises in CBAM-affected sectors reduce carbon emissions in their production processes, thereby paying less in CBAM charges when exporting to this market.

Fifth, the Vietnamese government should be proactive in observing countries' responses and behaviours other than the EU, focusing on some key partners of Vietnam or potential countries that could apply BCA to promote and prepare for long-term policies toward a green economy aligned with the global vision.

Finally, in response to the foreign BCAs, some SHD participants suggested that Vietnam establish and implement a mechanism like BCAs to be applied to products imported from other countries.



## 3.2 From Industry

The notable common view from participants of Vietnamese industries affected by BCAs is the willingness to meet the requirements of BCAs, including the EU's CBAM. They believe that CBAM may have some incompatibility points with WTO or the European Union–Vietnam Free Trade Agreement regulations; yet resolving those issues through the corresponding dispute settlement mechanism might be lengthy and could result in losing export markets. At the same time, when participating in the supply chains, businesses are required by foreign partners to meet the requirements of importing countries. According to Mr. Nguyễn Cảnh Cường, Commercial Counsellor at the Vietnam Trade Office in the United Kingdom, the production and export of products, such as cast iron, steel, aluminum, cement, and fertilizers from developing countries (including Vietnam), will face difficulties (Trung tâm WTO, 2023a). The competitive advantage gained from cheaper electricity and lower environmental protection costs will diminish due to the newly incurred cross-border carbon tax. “The effectiveness of FTAs will be somewhat reduced for export products from these industries. Low-emission industries will have growth opportunities, while high-emission industries will decline. Products from these sectors will experience corresponding changes,” Mr. Cường concluded. Table 1 summarizes the estimated impacts of the EU's CBAM regulation (as of March 2023) on Vietnam in 2030 for some key sectors (Trung tâm WTO, 2023c).

**Table 1.** The estimated impacts of EU's CBAM regulation (as of March 2023) on Vietnam in 2030 for key sectors

	Steel	Aluminum	Fertilizer	Cement
Change in production (%)	-0,8 [-1,7;-0,0]	-0,4 [-0,8;-0,0]	-0,0 [-0,0;-0,0]	-0,1 [-0,2;-0,0]
Change in export value (%)	-3,7 [-5,5;-0,4]	-4,3 [-5,7;-0,7]	-0,0 [-0,0;-0,0]	-0,6 [-0,8;-0,2]
Change in import value (%)	-0,3 [-1,3;+0,8]	-0,1 [-0,7;+0,4]	-0,0 [-0,0;-0,0]	-0,1 [-0,7;+0,1]
Change in emission levels (million tons of CO <sub>2</sub> )	-1,0 [-2,0;-0,0]	-0,2 [-0,4;-0,0]	-0,0 [-0,0;-0,0]	-0,2 [-0,4;-0,0]

Source: Trung tâm WTO, 2023c.

Note: The “-” sign indicates a decrease compared to the trend scenario when CBAM starts being implemented in 2026 (all other conditions remaining unchanged); the “+” sign indicates an increase.

Participants from the industries to the SHDs also pointed out that because the CBAM is still quite new and the EU itself is in a “guiding stage,” they have difficulty understanding and completing the forms that the EU provides. Therefore, enterprises need technical assistance from the EU's experts or the government's competent authorities. Besides these common views, participants of each affected industry express opinions regarding the impacts of BCAs on their industries and develop their corresponding action plans.



### 3.2.1 Iron and Steel

SHD participants from the VSA noted that Vietnam's current annual steel export output could reach about 9 million–10 million tonnes, of which approximately 20% is exported to the EU market. This industry has a huge initial investment and operating costs. At the same time, participants affirmed that businesses in the Vietnamese steel industry face many difficulties when responding to the BCA requirements.

Vietnam steelmaking technology, mainly blast furnaces, is a high-emission technology (about three times more than electric furnaces) but is suitable for large production volumes, as well as the specific conditions and circumstances of Vietnam. In addition, although information relating to BCAs has been disseminated through different channels, many difficulties remain in raising awareness among enterprises. Consequently, only a small number of steel industry enterprises understand the technical aspects of BCAs/the CBAM. Despite that, VSA businesses have gradually become accustomed to inventorying GHG emissions, as required by the government via recently issued legal documents. Some businesses have also reported GHG emissions according to the EU's CBAM roadmap.

A steel industry representative also indicated that if businesses in the industry have to pay a carbon tax, they should prioritize paying that tax to Vietnam rather than paying it to foreign countries. Therefore, steel enterprises recommend that the government issue regulations on the domestic carbon market soon to limit the impact of foreign BCA mechanisms.

### 3.2.2 Aluminum

Participants from the Vietnam Aluminum Association (VAA) noted that the aluminum production process has six stages, five of which can be performed by Vietnam's aluminum industry: i) bauxite exploitation; ii) alumina production; iv) aluminum alloy smelting; v) casting, extrusion, pressing, and rolling; and vi) product surface treatment. The third stage, aluminum smelting, cannot be done domestically. As a result, enterprises in the aluminum industry remain entirely dependent on imported aluminum ingots and billets for their production of aluminum products (Vietnam Aluminum Profile Association, n.d.). Hence, if raw aluminum is imported for export to the EU, the source of the imports must have low carbon emissions to meet the requirements for export activities.

Representatives of Vietnamese aluminum enterprises also noted that the main emission sources in the production process of aluminum products in Vietnam are energy used and emissions released during industrial production. Some businesses in the aluminum industry have made efforts to implement solutions to increase energy efficiency (improve the efficiency of electrical equipment; reduce furnace heat loss during alloying, casting, extrusion, etc.; pressing and rolling aluminum) and add additives (activated carbon) to reduce losses during the aluminum smelting process. In addition, some businesses have also implemented environmental, social, and governance principles and aim to participate in afforestation projects to generate carbon credits for themselves.

Located in the Asia–Pacific region, representing the largest market, and also predicted to be the most developed market in the next 5 years due to increasing consumption from China,



India, and Japan, Vietnam's aluminum industry is predicted to have a good growth rate, averaging 7%/year. By these participants' estimations, the EU's CBAM is expected to reduce Vietnamese exports to the EU by about 4%, equivalent to about USD 12 million per year.

### 3.2.3 Cement

The export growth rate of Vietnamese cement reached 171% per year in 2022, indicating that this sector has a lot of potential (Hòa Phát Group, 2022). However, the cement manufacturing industry is composed of very few large enterprises; most businesses are of medium and small scale. This poses challenges in the implementation and enforcement of the CBAM for the sector in general. Large companies typically have sufficient financial resources to pay for consulting services from legal departments and to hire legal staff to closely monitor BCA regulations. However, for medium and small enterprises, it is difficult to meet this requirement. They often struggle to balance profits with the recruitment of legal staff.

Following the agreement to reduce fossil fuel consumption at the recent United Nations Climate Change Conference 2023 (COP 28), the Vietnam Cement Association has begun initial responses to mitigate the impact of the EU's CBAM on the industry. However, most cement plants in Vietnam have not yet made official declarations about their carbon emissions. Participants from cement enterprises noted that emission inventories have been initiated for plants exporting to the United States and Australia, but no specific actions have been taken for the EU market. Some major cement plants in Vietnam, such as Vissai, Long Son, and Xuân Thành, have conducted emission reports and inventories, hired consultants, and organized training on emission reporting. Even though larger enterprises are willing to pay for legal consulting services and build a legal team, most small and medium-sized enterprises (SMEs) do not prioritize these aspects; hence, it remains very challenging for them to comply with CBAM requirements.

In addition, cement production is currently declining due to high input costs and low selling prices. This issue is particularly critical for SME plants without a stable customer base, which face the risk of closure. Consequently, the disparity between production costs and selling prices leads to diminishing resources, which poses significant challenges to meeting new regulations and maintaining sustainable business operations for most cement enterprises. In this context, the Vietnam Cement Association and the industry's enterprises have been striving to develop specific strategies and measures to not only minimize the impact of the CBAM but also enhance competitiveness in the international market. This includes investing in green technology, improving production efficiency, and building a stable customer base to sustain the growth and sustainable development of Vietnam's cement industry.

### 3.2.4 Fertilizer

Based on the industry strategy for fertilizer and Vietnam's National Strategy on Climate Change to 2050, all businesses in the chemical and fertilizer production sector are expected to apply technologies to reduce nitrous oxide (N<sub>2</sub>O) emissions by 2030. The potential is to reduce CO<sub>2</sub> emissions by 5.6 million tonnes from 2021 to 2030. Carbon capture technologies



are expected to be implemented from 2045, covering approximately 50% of production levels, equivalent to a reduction of about 4 million tonnes of carbon annually.

As previously mentioned, Vietnam produces and exports fertilizers but has not yet exported CBAM-covered products (inorganic fertilizers) to Europe. Currently, 16 facilities in the sector are required to conduct audits and mandatory reductions of N<sub>2</sub>O emissions, as stipulated under Decision 01/2022/QĐ-TTĐ,<sup>6</sup> while Vietnam's fertilizer industry aims to prioritize domestic production and supply over exports. For the time being, therefore, efforts to reduce N<sub>2</sub>O emissions in the sector would most likely focus on domestic emission reduction targets rather than addressing CBAM impacts (Trung tâm WTO, 2023d).

Mr. Phùng Hà, Vice President of the Vietnam Fertilizer Association, emphasized an urgent need for a new production strategy for the fertilizer industry in Vietnam (Nhật Xuân et al., 2023). The exothermic chemical reactions involved in fertilizer production are considered direct emissions because these reactions result in the generation of CO<sub>2</sub>. On the one hand, reducing ammonia in fertilizer production processes becomes crucial to mitigate environmental impacts. However, implementing such reductions comes at a considerable cost. On the other hand, exploring carbon credit trading to minimize carbon emissions in fertilizer production does not appear to be highly feasible at present, given the current high prices in the carbon credit market. Therefore, fertilizer companies that aim to enter the international market need to quickly adapt and implement new production plans and strategies. In addition, Mr. Phùng Hà stressed that government regulatory agencies need to proactively develop and issue supportive policies and guidelines for businesses (Nhật Xuân et al., 2023). These policies should encourage and provide financial support, technology, and human resource training to help businesses transition their business models appropriately. This not only aims to enhance the competitiveness of Vietnamese fertilizer companies on the international stage but also to help them better adapt to the stringent changes and requirements of the global market.

### 3.2.5 Labour Unions

Environmental measures and policies can bring significant long-term benefits to workers by improving the working environment and creating greener job opportunities. However, in the short term, these measures often negatively impact workers. For example, the implementation of regulations on supply chain traceability, as seen in the case of Germany and other European countries, can lead to reduced orders for Vietnamese businesses, resulting in job losses and affecting the income and social welfare of workers. This highlights the interconnectedness between employers and employees, where difficulties faced by one side inevitably affect the other. Participants from the Vietnam General Confederation of Labor noted that they have been actively implementing government directives and rolling out the National Green Growth Strategy to foster a greener working environment and develop communication strategies for all levels of trade unions. This strategy aims to help workers better understand the concept of green living and the value of energy efficiency in both production and daily life. This not only

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<sup>6</sup> Decision 01/2022/QĐ-TTĐ dated January 18, 2022, promulgating the list of sectors, greenhouse gas-emitting establishments subject to greenhouse gas inventory. There are 21 sectors and 1912 entities subject to the GHG inventory and the preparation of GHG reduction plans following the roadmap.





contributes to building a greener working and living environment but also supports businesses in adapting to climate change and environmental policies.

### 3.2.6 Financial Sector

Different SHD participants have expressed their opinions regarding the role of the financial sector. At first, participants from the government observed that there are different approaches to building policy frameworks. From the business perspective, there are six factors to consider: finance, market, technology, human resources, information, and resource management. Businesses have two financial sources: public (state and government funds) and private (the businesses themselves). From the state's perspective, the issue of finance involves revenue and expenditure. There is a circular flow: any revenues collected could be reinvested to support technological factors and innovative projects, thereby providing support back to businesses—for example, those affected by the CBAM. Clearly, the perspectives of these two entities regarding CBAM-related issues differ. While the state is concerned with managing financial revenue and expenditure, businesses need to consider five other factors in addition to finance. Therefore, it is necessary to find a common ground between businesses and the state, with academic institutions acting as the main bridge.

From another angle, participants from the industry highlighted that when investing in Vietnam, businesses often question the costs of complying with CBAM and whether these costs would lead to increased sales or enhanced business value. It was emphasized that a fundamental concern for businesses is managing costs, suggesting that they should find alternative ways to balance expenses. Investment funds, government investment funds, or other sources of support could assist businesses in this regard. The participant also raised the issue of whether the costs of complying with the CBAM or BCAs are appropriate and whether businesses should mobilize resources from outside the company, assessing the effectiveness of such mobilization. These questions are frequently encountered when advising Vietnamese businesses, especially those exporting in sectors like aluminum and steel. Additionally, businesses often inquire about access to green financial resources when complying with the CBAM. They wonder if they should participate in alliances like the Green Finance Subcommittee established by the European Chamber of Commerce in Vietnam. There is also the question of whether Vietnamese businesses should proactively seek funding for their incurred costs or establish investment funds to research CBAM compliance. Concerns about whether Vietnam is lagging in CBAM compliance compared to proactive countries like Thailand and Indonesia were also noted, suggesting that Vietnam should be more proactive. Finally, there is a discussion on whether industry associations, such as those for aluminum and steel, should work more collaboratively rather than separately, as they currently do in Vietnam.

In practice, the role of finance in decarbonization cannot be denied. Finance plays a crucial role in production transformation to reduce CO<sub>2</sub> and other GHG emissions. First, finance can support investment in green technologies and projects, such as renewable energy and public transportation, facilitating the transition to more sustainable production and consumption systems. Second, finance can contribute to the development of green financial markets by creating products and services that support projects and businesses with positive impacts on the environment. Third, finance can help allocate capital efficiently to projects with positive



environmental impacts, such as reducing emissions and enhancing energy efficiency. Finally, finance also plays a significant role in managing environmental risks by ensuring compliance with environmental and social standards in investment and financial activities. This highlights the importance of integrating environmental factors into financial decision making to promote sustainable development and minimize negative environmental impacts.

Recently, United Overseas Bank (UOB) Vietnam has forged a green trade finance partnership with Betrimex, a Ben Tre Import-Export Joint Stock Company (Tuổi trẻ News, 2024). Under this agreement, UOB will extend short-term credit facilities to Betrimex for importing or sourcing domestic raw materials to produce certified organic products, including those with Fairtrade certification. This certification underscores Betrimex's adherence to stringent standards encompassing social responsibility, environmental sustainability, and economic viability, such as ensuring safe working conditions, environmental protection, sustainable livelihoods, and community development. This initiative is seen as aligning with UOB Vietnam's commitment to financing sustainable ventures, thereby contributing to steering the economy toward a greener and more sustainable trajectory (Tuổi trẻ News, 2024).

In a parallel endeavour, Orient Commercial Bank (OCB) inked an agreement with the International Finance Corporation (IFC) to undergo a green banking transformation that aims to foster sustainable development. Initially, the IFC will allocate approximately USD 150 million to OCB to lend to enterprises meeting green credit criteria at preferential interest rates (Thanh Van, 2024). These funds will primarily target sectors such as renewable energy, environmentally friendly high-tech industries, and sustainable agriculture. Such initiatives highlighted the bank's intention to introduce specialized financial products tailored to green initiatives, including green bonds, green credits, and green payment platforms, thereby confirming OCB's commitment to adjusting products to minimize environmental impact, with eventual plans to reject projects detrimental to the environment or with negative social repercussions. Moreover, Asia Commercial Bank commenced in 2024 by unveiling a green and social credit package totalling VND 2,000 billion. This package prioritizes funding for businesses with green or socially oriented business plans, encompassing sectors such as renewable energy (solar power), energy efficiency, green construction, and clean transportation. Interest rates for both short- and long-term loans start from 6% per annum, with waived or reduced prepayment fees (Thanh Van, 2024).

In addition, SHD participants noted that the BCA mechanism could play a crucial role in incentivizing countries and businesses to engage in carbon-neutral activities. To facilitate the field of financing for carbon neutrality, this mechanism needs to be designed with factors such as clear and transparent standards for measuring emissions, flexible payment methods to reduce financial barriers, encouragement to invest in green projects like renewable energy, support for developing countries to effectively participate in carbon-neutral activities, and international cooperation to enhance the effectiveness of these activities and promote the transition to a greener and more sustainable economy.



### 3.4 From Academia

University academics play a pivotal role in addressing the challenges posed by BCA policies in general and the CBAM in particular. They can respond effectively through a multifaceted approach encompassing research, consultancy, support, and active engagement with both governmental bodies and industries.

First, academics can contribute significantly through rigorous research efforts. This research involves conducting comprehensive studies on the potential impacts of the CBAM/BCAs across various sectors, such as iron and steel, cement, aluminum, fertilizer, etc. Through cost-benefit analyses, academics can evaluate the economic implications of these policies, identifying potential winners and losers. Furthermore, academics can delve into developing innovative solutions tailored to each sector's needs and challenges. These solutions can range from technological advancements to policy recommendations aimed at mitigating adverse effects and maximizing benefits. Recommendations should encompass short-, medium-, and long-term strategies, addressing both immediate concerns and future sustainability goals.

Second, academics possess the expertise and objectivity necessary to provide consultancy services to governmental agencies and industries regarding the implementation of BCA measures. They can undertake this role by offering regular assessments and progress reports on the execution of these policies. Through these reports, academics can evaluate the efficacy of current measures, pinpoint any deficiencies, and propose strategic recommendations to optimize outcomes. By assuming the role of impartial advisors, academics foster well-informed decision-making processes and enable policy adjustments that align with the evolving landscape. This consultancy role underscores academia's crucial function in guiding stakeholders toward more effective and sustainable approaches to managing carbon emissions and trade policies.

Third, academics are well-positioned to provide tangible assistance to industries grappling with the implications of BCAs, specifically the CBAM. At first, it is about raising awareness of enterprises affected by the CBAM. As noted by one industry participant in the SHDs, surveys of business reactions to the CBAM in ASEAN conducted by organizations like PwC or the ASEAN Development Economic Research Institute (results up to February 2024) classify businesses into four groups: those completely unaware of the CBAM, those aware but unsure of its impact, those who understand the impact on six industries but do not know how to respond, and those who fully understand CBAM and are developing response strategies (Buysing Damsté et al., 2024). Scholars could assist enterprises in any or all of these categories, from raising awareness about the CBAM and its impacts on different sectors to developing strategies to respond effectively to the CBAM.

Particularly, an academic expert could help calculate and balance the costs of implementing BCAs against the profits of businesses to maximize their profitability. In practice, when allocating resources to meet CBAM requirements, including investments in technology, infrastructure upgrades, and administrative costs related to carbon accounting and reporting, businesses may wonder whether compliance with CBAM regulations leads to increased sales volumes or enhances the overall value proposition of the company. These questions underscore the fundamental challenge that businesses face: balancing the costs of compliance



against potential benefits and market competitiveness. These are areas where scholars can act as facilitators. By offering specialized knowledge in carbon accounting methodologies, academics can guide industries in accurately measuring and monitoring their emissions. This collaborative effort not only ensures compliance with regulatory standards but also facilitates the implementation of targeted emission reduction strategies. Through this hands-on support, industries gain the necessary tools and insights to navigate the complexities of carbon management effectively. In essence, academia's role in assisting industries underscores its practical contributions to fostering sustainability and regulatory compliance within the business landscape.

Fourth, university faculty members play a central role in bridging the gap between government agencies and affected industries. They can facilitate knowledge exchange and collaboration through various platforms such as international conferences, seminars, workshops, on-the-job training programs, and fieldwork initiatives. These platforms provide opportunities for stakeholders to share insights, best practices, and lessons learned, fostering a collaborative approach to addressing CBAM/BCA challenges. Academic publications also serve as a crucial channel for disseminating research findings and policy recommendations. Through published articles, policy briefs, and regular reports, academics can reach a wider audience, including policy-makers, industry leaders, and fellow researchers. These publications not only contribute to the academic discourse but also inform real-world decision-making processes, driving evidence-based policy formulation and implementation.



## 4.0 International Principles and Best Practices

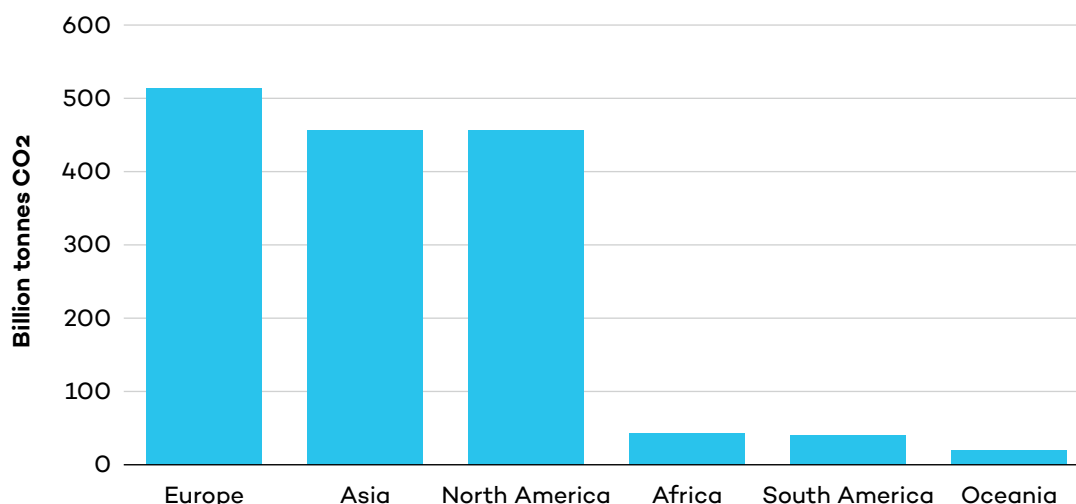
According to Vietnamese stakeholders, some of the issues that are important to consider when discussing the design of BCAs and international principles and best practices include (i) the principle of common but differentiated responsibility, (ii) the extent of carbon footprint traceability and measurement, (iii) the extent of coverage of BCA/CBAM measures, (iv) administrative burden, (v) technical assistance and technology transfer, and (vi) international dialogues and cooperation platforms to coordinate the design of BCAs.

### 4.1 The Principle of Common but Differentiated Responsibility

The Paris Agreement includes the phrase “common but differentiated responsibilities,” in Article 2, Clause 2, where it explains: “the Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in light of different national circumstances” (United Nations Framework Convention on Climate Change, 2015). Specifically, the agreement acknowledges that countries have different economic, social, and developmental conditions, and therefore, they will have different responsibilities and capabilities in addressing climate change. This agreement creates a flexible legal framework that allows each country to define and implement its commitments based on its own capabilities and circumstances while still aiming toward the common goal of mitigating climate change globally. The current contentious issue is whether the CBAM creates differential treatment between developed and developing nations. To ensure fairness in the implementation of CBAMs, it is necessary to consider and differentiate the levels of emissions of each country. Although shared responsibility is something that every country needs to fulfill, not all nations should have equivalent responsibilities. Advanced nations in industrial sectors need to clearly define their responsibilities in a way that aligns with reality (Pleek & Mitchell, 2023). For instance, Figure 4, outlining cumulative CO<sub>2</sub> emissions over the period 1751–2017, shows that the United States was accountable for 25% of the total carbon emissions in the atmosphere, while the EU was responsible for approximately 22%. The emissions from poorer countries in the Global South were minimal. Even then, China’s per capita emissions—a 12.7% share—are significantly lower than those of both the United States and the EU.



**Figure 4.** Who has contributed most to global CO<sub>2</sub> emissions?



Source: Ritchie, 2019.

In fact, the EU has made significant progress in addressing climate change by introducing its CBAM. Currently, China is the largest contributor to global CO<sub>2</sub> emissions, accounting for approximately 30%, followed by the United States with contributions of up to 14% (Lee et al., 2023). Despite that, Vietnamese stakeholders believe that the EU's CBAM has somehow overlooked the principle of “common but differentiated responsibilities and respective capabilities” concerning developing nations in its design. This oversight could be challenging, given that the EU's current per capita emissions exceed 5 tonnes, compared to only 0.3 tonnes and 1.5 tonnes in low-income and lower-middle-income countries, respectively (Lee et al., 2023). The CBAM requires countries with very different technology levels to face the same carbon requirements and duties. The more outdated the technology, the lower the output and often the higher the emissions, perpetuating historical inequalities (Sen, n.d.). Since the revenue generated from CBAM tariffs is unlikely to be reimbursed to developing countries, the EU should then provide substantial and explicit technical assistance/aid to countries that are poorer and responsible for less carbon emissions.

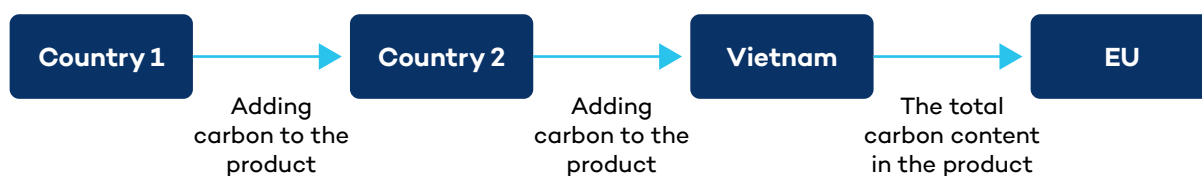
Climate change must be addressed cooperatively as a global public good involving all stakeholders. Making various parties cooperate is not an easy task. Given that a stable climate is a public good, one country could emit more but still bear the same responsibility as a country that emits less. In the design of BCA/CBAM, the applying countries should consider the principle of common but differentiated responsibility so that exporters from developing countries or least developed countries (LDCs) could be given, for instance, special and differential treatment compared to those of more developed nations. This will help create a fairer, more effective framework for reducing global carbon emissions.



## 4.2 The Extent of Carbon Footprint Traceability and Measurement

Vietnam faces difficulties in inventorying carbon emissions amid the urgent need to calculate these emissions. Accurate calculations can lead to proper measures in implementing carbon border mechanisms by determining the percentage of emissions attributable to the exporting country. “The carbon footprint is a measure of the amount of greenhouse gases (such as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O),” both direct and indirect emissions, released into the environment by human activity or accumulated throughout the life cycle stages of a product (VR Energy, 2024). Internationally, the ability of the carbon footprint to address issues such as carbon leakage, competitiveness concerns, border tax adjustments, and the distribution of emissions among countries is receiving increasing attention from the media and policy-makers. However, tracking the sources of carbon poses certain challenges, as specifically illustrated in Figure 5.

**Figure 5.** Carbon traceability



Source: Trung tâm WTO, 2023c.

As noted by an expert from the Technical Assistance Project on the CBAM impact assessment, Vietnamese enterprises can only provide emissions information during the production and processing of goods. In contrast, the CBAM requires emissions data for input/raw materials at some stages used in production. According to the EU’s proposal, the calculation of goods emissions will prioritize actual emissions measured by the enterprises themselves. In cases where enterprises cannot fully determine or have indirect emissions, the CBAM will use default average emission values for each exporting country issued by the European Commission based on information provided by the exporting country or group of exporting countries. If a country does not have default values, the emissions will be based on the highest emission levels in the EU for each type of product (Vietnam Financial Times, 2023). In some cases, the last exporters face difficulties soliciting information from previous exporters exporting raw materials for them. They may have emission value at their stage of production, but not in the previous stages. As such, BCA/CBAM should somehow specify the burden for exporters of different stages so that, for instance, the last exporters could share the responsibilities with others exporting input/raw materials used in production.

## 4.3 The Extent of Coverage of BCA/CBAM Measures

It is suggested that the EU’s CBAM—and BCA, in general—needs to be designed to prevent double payment of relevant carbon costs. In case enterprises in exporting countries already bear some costs for climate change mitigation and/or for environmental purposes (even if they have not paid any carbon price), should BCA’s applying countries not consider





reducing part(s) of the cost to be paid in importing countries regarding carbon content? This would ensure fair competition between domestic and imported products while encouraging exporting countries to continue implementing measures to reduce carbon emissions. Additionally, it facilitates businesses in transitioning to cleaner, more sustainable production and consumption, thereby promoting economic and environmental development on a global scale.

#### **4.4 Administrative Burden**

During the transitional phase, EU importers of covered goods must submit quarterly CBAM reports detailing the quantities of covered products imported, the actual embedded GHG emissions associated with these products, and any carbon prices paid in the country of origin (not including export price reductions or other forms of compensation upon export). In essence, exporters have to provide such information for the EU importers to submit to the authority, and thus, exporters also bear the administrative burden. This burden of the reporting process may include ensuring accuracy, completeness, and compliance with legal requirements, as well as managing deadlines and coordinating with other stakeholders. It may include synthesizing data on carbon emissions, energy usage, or other relevant indicators and presenting them in standardized formats for verification and analysis. However, reporting carbon emissions from the exporter's perspective raises uncertainty, as the report could be rejected or returned because it does not meet the quality standards required by the importing country. Additionally, if an enterprise exports the same product to multiple countries, a common template/standard for reporting carbon emissions would ease the burden for exporters by avoiding multiple reporting processes to importing countries with different criteria. The administrative process should also be gradually streamlined and improved to further reduce the difficulties in reporting. It will also be useful to consider providing technical assistance to enterprises, particularly micro and SMEs, in developing countries and LDCs to build their capacity to report accurately and in a timely manner.

#### **4.5 Technical Assistance and Technology Transfer**

Technology transfer between countries and territories is essential, and developed countries are encouraged to transfer their technologies to developing countries and LDCs in an effort to address climate change and reduce carbon emissions. As noted by industry participants in the SHDs, technologies that have been phased out in one country could be transferred to another country at a lower level of development if the application of such technologies produces less emission than the old ones. Through providing support and transferring sustainable technologies, countries can accelerate the transition to low-carbon economies and enhance their resilience to climate-related challenges. For example, advanced energy efficiency technologies can decrease emissions from industrial and construction processes, while renewable energy systems can substitute fossil fuel-based energy sources. Similarly, climate-smart agricultural methods can enhance carbon sequestration in soils and decrease emissions from deforestation and land-use changes. By utilizing these technologies with support from technical assistance programs, countries can achieve significant reductions in carbon emissions while promoting economic development and sustainable growth.



## **4.6 International Dialogues and Cooperation Platforms to Facilitate Convergence in BCA Design**

It is suggested that international dialogues and cooperation platforms should be established to facilitate convergence in the design of BCAs. Achieving convergence on the scope, pricing mechanisms, and enforcement methods of the BCA mechanism remains crucial for promoting positive trade development. This ensures that exporters do not have to comply with too many different BCA rules when exporting to different markets; also, BCA-applying countries can deliberate and make decisions thoughtfully and fairly, based on contributions and input from relevant stakeholders. By organizing events, workshops, and forums/meetings, participation from relevant parties could have an open space for discussion and negotiation. This participation effectively serves as a foundation for fostering convergence and cooperation among parties to design and implement BCAs effectively and fairly, ensuring that relevant policies and measures are promoted in a unified and efficient manner.



## 5.0 The Way Forward

Businesses need access to as much information as possible. The purpose of implementing the CBAM is not to collect money but to signal that the green transition is inevitable. From a business perspective, companies need to pay attention to developing strategies in the short, medium, or long term. In the short term, businesses need to carefully consider the actual costs of complying with CBAM. Also, businesses should consider the global supply chain, especially the commitments of existing free trade agreements, to leverage green financial resources and prepare CBAM reports—even if they are not directly exporting to the EU, they could still be part of the global supply chain. It is essential for businesses to proactively seek information on policies related to CBAM through EU-CBAM webinars.

In the medium and long terms, businesses need to prepare strong financial resources for the general trend toward the green transition and the establishment of an emissions trading market. Regardless of which aspect they focus on, the key concern remains the budget for the green transition. Technological advancements, operational costs, and other arising expenses are also significant areas requiring substantial investment. Two recommendations emerge from these realities. For one, businesses can create a pool of financial resources by themselves. As noted by one industry participant in the SHDs, Thailand's experience can be instructional: driven by the needs of the Thai business community, businesses have pooled resources and established research funds to comply with the CBAM, proactively engaging major markets like the EU and the United States. Another feasible solution is a collaboration between private investment funds and government investment funds to create green financial funds that support businesses. In addition to financial resources, Vietnamese businesses must proactively gather information and establish networks for CBAM compliance research. By sharing and leveraging information, businesses can develop effective strategies to not only meet international market demands but also achieve sustainable long-term growth. This not only helps businesses meet global standards but also creates opportunities for them to expand and grow their markets.

From a governmental perspective, Vietnam holds a certain position in negotiating with other countries, and thus, various options need to be carefully considered. During BCA/CBAM-related discussions, cooperation, or negotiations, Vietnam can request contributions and support for technical aspects related to BCA/CBAM from countries already implementing such BCAs. In addition, the government can harness feedback and insights from companies, academic institutions, and research institutes to enhance and refine its policies and strategies. This approach not only aids in negotiation processes but also ensures the development of rational, well-informed policies that promote sustainable development and align with international standards.



## 6.0 Conclusion

The initiation of the CBAM has ignited substantial discourse, owing to its perceived disparate treatment of developing and developed nations. This debate stems from the significant carbon emissions emanating from developing countries like India, China, and Vietnam. Presently, CBAM is in its initial stage, primarily concentrating on gathering reporting data from importers, with several key pieces of implementing legislation still to be written. Nonetheless, there is evident enthusiasm among relevant stakeholders in Vietnam to promote sustainability across various pivotal sectors. This report has offered insights into multi-stakeholder responses to this mechanism and suggested ways in which the challenge of BCAs can be better faced to ensure effective climate action in an equitable manner among countries at different levels of development.

Furthermore, the report elucidates various international policies and measures concerning CBAMs. It suggests that formulating a comprehensive national policy framework to deal with CBAMs and other similar schemes by trading partners will take considerable time due to its distinctive characteristics and stringent requirements. Achieving optimal efficacy will require collaborative efforts among businesses, regulatory bodies, and governments facilitated by educational institutions equipped with high-calibre research personnel.



## References

- Buying Damsté, C., Banks, J., & Prepisci, J. (2024, February 27). *The EU Carbon Border Adjustment Mechanism (CBAM): Implications for supply chains*. PwC. <https://www.pwc.com/gx/en/services/tax/esg-tax/cbam-supply-chain-imperatives.html>
- Centro de Estudos de Integração e Desenvolvimento. (2024, July). *Global dialogue on border carbon adjustments: The case of Brazil*. International Institute for Sustainable Development. <https://www.iisd.org/system/files/2024-07/border-carbon-adjustments-brazil.pdf>
- Chi Nhân. (2023, June 28). *Xuất khẩu sắt thép vào EU tăng 55%, mở thêm hạn ngạch từ 1.7*. [The export of steel to the EU has increased by 55%, increasing quota from July 1st]. thanhnien.vn. <https://thanhnien.vn/xuat-khau-sat-thep-vao-eu-tang-55-mo-them-han-ngach-tu-17-185230628174819721.htm>.
- Dezan Shira & Associates. (2021, November 5). *COP26 and climate change: Vietnam's commitment to reducing emissions*. Vietnam Briefing. <https://www.vietnam-briefing.com/news/cop26-climate-change-vietnams-commitment-reducing-emissions.html>
- Duong, A. D. (2023, April 14). *Hiện trạng và định hướng phát triển ngành phân bón Việt Nam* [Current situation and development of Vietnam's fertilizer industry] [Presentation]. Conference: Effect assessment of EU's CBAM and suggestions for Vietnam (VCCI). [https://trungtamwto.vn/file/22339/05\\_phan-bonhien-trang-va-dinh-huong-nganh-phan-bon-viet-nam\\_greencic.pdf](https://trungtamwto.vn/file/22339/05_phan-bonhien-trang-va-dinh-huong-nganh-phan-bon-viet-nam_greencic.pdf)
- Espa, I., Francois, J., & van Asselt, H. (2022). *The EU proposal for Carbon Border Adjustment Mechanism (CBAM): An analysis under WTO and climate change law*. (WTI working paper 06/2022). Universitat Bern. [https://boris.unibe.ch/174432/1/WTI\\_Working\\_Paper\\_06\\_2022.pdf](https://boris.unibe.ch/174432/1/WTI_Working_Paper_06_2022.pdf)
- Giang, H. (2023, May 16). *Gov't approves National Power Development Plan 8*. Socialist Republic of Viet Nam Government News. <https://en.baochinhphu.vn/govt-approves-national-power-development-plan-8-111230516085506239.htm>
- Government of Canada. (2021). *Exploring border carbon adjustments for Canada*. <https://www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments/exploring-border-carbon-adjustments-canada.html>.
- Ha, V. (2023). *Ngành thép Việt Nam: Làm gì để tận dụng dư địa và tiềm năng phát triển?* [Vietnam's steel industry: How to capitalize on capacity surplus and development potential?]. Cong Thuong. <https://congthuong.vn/nganh-thep-viet-nam-lam-gi-de-tan-dung-du-dia-va-tiem-nang-phat-trien-287728.html>
- HM Treasury. (2023, December 18). *Factsheet: UK Carbon Border Adjustment Mechanism*. <https://www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation/outcome/factsheet-uk-carbon-border-adjustment-mechanism>
- Hòa Phát Group. (2022). *2022 annual report*. <https://file.hoaphat.com.vn/hoaphat-com-vn/2023/04/annual-report-2022-hpg.pdf>



- Industry and Trade Magazine. *Dự báo phòng vệ thương mại cho thép Việt* [Forecast of trade remedy investigations for Vietnamese steel]. Ministry of Industry and Trade. <https://tapchicongthuong.vn/magazine/du-bao-phong-ve-thuong-mai-cho-thep-viet-115248.htm>
- International Fund for Agricultural Development. (2019, November 12). *Information and Communication Technology for Development (ICT4D) strategy* (EB 2019/128/R.5). <https://webapps.ifad.org/members/eb/128/docs/EB-2019-128-R-5.pdf>
- Lê, T. (2023). *Doanh nghiệp thép trước mối lo bị thuế carbon cản đường* [Steel companies facing concerns over the implementation of the EU's CBAM]. VnBusiness. <https://vnbusiness.vn/viet-nam/doanh-nghiep-thep-truoc-moi-lo-bi-thue-carbon-can-duong-1093962.html>
- Lee, K., Li, J., & Wadhwa, D. (2023, October 11). *From climate science to global action: Who contributes most to global greenhouse gas emissions?* World Bank Blogs. <https://blogs.worldbank.org/en/opendata/climate-science-global-action-who-contributes-most-global-greenhouse-gas-emissions#:~:text=The%20largest%20contributors%20to%20current,Qatar%2C%20Bahrain%2C%20and%20Kuwait>
- Monkelbaan, J., & Figures, T. (2022, December 19). *CBAM: What you need to know about the new EU decarbonization incentive*. World Economic Forum. <https://www.weforum.org/agenda/2022/12/cbam-the-new-eu-decarbonization-incentive-and-what-you-need-to-know/>
- Net Zero Tracker. (2023, June 12). *Net zero targets among world's largest companies double, but credibility gaps undermine progress*. <https://zerotracker.net/insights/net-zero-targets-among-worlds-largest-companies-double-but-credibility-gaps-undermine-progress>
- Nguyen, H. (2023, May 17). *Diễn đàn doanh nghiệp ngành nhôm Việt Nam năm 2023* [Forum of Vietnam's aluminum industry 2023]. Cong Tuong. <https://congthuong.vn/dien-dan-doanh-nghiep-nganh-nhom-viet-nam-nam-2023-254418.html>
- Nguyen, T. (2023, August 30). *Thúc đẩy sản xuất bền vững trong ngành xi-măng* [Promoting sustainable manufacture in cement industry]. nhandan.vn. <https://nhandan.vn/thuc-day-san-xuat-ben-vung-trong-nganh-xi-mang-post769995.html>
- Nguyet Ha. (2024, November 27). *4 ngành sẽ chịu tác động mạnh từ CBAM khi xuất khẩu vào EU* [Four industries will be strongly impacted by the EU's CBAM when exporting to the EU]. VnEconomy. <https://vneconomy.vn/4-nganh-se-chiu-tac-dong-manh-tu-cbam-khi-xuat-khau-vao-eu.htm>.
- Nhật Xuân, Công Trung, & Ngọc Hien (2023, November 3). *Chủ động ứng phó với thuế carbon* [Proactively respond to the carbon tax]. Tuổi Trẻ Online. [https://tuoitre.vn/chu-dong-ung-pho-voi-thue-carbon-20231103075721509.htm?gidzl=VeD4CL629Wz\\_cKG\\_LfZ2NoRGZXAdoWDD9nDCXkVBbDWo4njGPXxNshCIcv1pYjGOS8PPJ0ODL\\_C7Luul1G](https://tuoitre.vn/chu-dong-ung-pho-voi-thue-carbon-20231103075721509.htm?gidzl=VeD4CL629Wz_cKG_LfZ2NoRGZXAdoWDD9nDCXkVBbDWo4njGPXxNshCIcv1pYjGOS8PPJ0ODL_C7Luul1G)
- Observatory of Economic Complexity (n.d.). *About the site*. <https://oec.world/en/resources/about.>



- Organisation for Economic Co-operation and Development. (2020). *Climate policy leadership in an interconnected world: What role for border carbon adjustments?* <https://doi.org/10.1787/8008e7f4-en>
- Phòng vệ thương mại – Trung tâm WTO [Trade remedies – WTO Center]. (2023, November 13). *Liên tiếp dính kiện, ngành nhôm khó trăm bề* [Facing continuous trade remedy investigations, the aluminum industry is in a difficult situation]. VCCI. <https://chongbanphagia.vn/lien-tiep-dinh-kien-nganh-nhom-kho-tram-be-n27198.html>
- Pleek, S., & Mitchell, I. (2023, November 15). *The EU's carbon border tax: How can developing countries respond?* Center for Global Development. <https://www.cgdev.org/blog/eus-carbon-border-tax-how-can-developing-countries-respond>
- Prime Minister of Vietnam. (2022). Decision No. 896/QĐ-TTg Approving the National Strategy for Climate change until 2050. <https://thuvienphapluat.vn/van-ban/EN/Tai-nguyen-Moi-truong/Decision-896-QD-TTg-2022-approving-the-National-strategy-for-climate-change-until-2050/525126/tieng-anh.aspx>
- Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 Establishing a Carbon Border Adjustment Mechanism (PE/7/2023/REV/1). <https://eur-lex.europa.eu/eli/reg/2023/956/oj>
- Ritchie, H. (2019, October 1). *Who has contributed most to global CO<sub>2</sub> emissions?* Our World in Data. <https://ourworldindata.org/contributed-most-global-co2> (Figure 4)
- Sen, P. (n.d.). *EU's Carbon Border Adjustment Mechanism and the Global South: How to make it work*. IEP@BU. <https://iep.unibocconi.eu/publications/eus-carbon-border-adjustment-mechanism-and-global-south-how-make-it-work>
- Song Ha. (2023, May 30). *Giải pháp cho ngành nhôm vượt qua khó khăn* [Measures for aluminum industry to overcome difficulties]. Vneconomy.vn, <https://vneconomy.vn/techconnect/giai-phap-cho-nganh-nhom-vuot-qua-kho-khan.htm>
- Taxation Customs Union. (2023). *Carbon Border Adjustment Mechanism*. European Commission. [https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism\\_en](https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en)
- Thanh Van. (2024, March 1). *IFC considers \$150 million investment in OCB*. Vietnam Investment Review. <https://vir.com.vn/ifc-considers-150-million-investment-in-ocb-109191.html>.
- Trung tâm WTO [WTO Center]. (2023a, May 5). *CBAM: Thách thức lớn cho xuất khẩu thép sang thị trường Anh* [CBAM: Big challenge for steel exports to the UK market]. VCCI. <https://trungtamwto.vn/tin-tuc/23343-cbam-thach-thuc-lon-cho-xuat-khau-thep-sang-thi-truong-anh>
- Trung tâm WTO [WTO Center]. (2023b, May 5). *Cơ chế CBAM của EU và khuyến nghị giải pháp cho Việt Nam* [EU CBAM mechanism and recommended solutions for Vietnam]. VCCI. <https://trungtamwto.vn/hiep-dinh-khac/24032-co-che-cbam-cua-eu-va-khuyen-nghi-giai-phap-cho-viet-nam>.





- Trung tâm WTO [WTO Center]. (2023c, April 14). *Đánh giá tác động kinh tế của CBAM và những cân nhắc chính sách* [Assessing economic impacts of CBAM and policy implications]. VCCI. [https://trungtamwto.vn/file/22338/06\\_tac-dong-kinh-te-va-can-nhac-chinh-sach\\_vn\\_final.pdf](https://trungtamwto.vn/file/22338/06_tac-dong-kinh-te-va-can-nhac-chinh-sach_vn_final.pdf)
- Trung tâm WTO (WTO Centre). (2023d). *Hiện trạng và định hướng phát triển ngành phân bón Việt Nam* [Current status and development orientation of Vietnam's fertilizer industry]. [https://trungtamwto.vn/file/22339/05\\_phan-bonhien-trang-va-dinh-huong-nganh-phan-bon-viet-nam\\_greencic.pdf](https://trungtamwto.vn/file/22339/05_phan-bonhien-trang-va-dinh-huong-nganh-phan-bon-viet-nam_greencic.pdf)
- Tuổi Trẻ News. (2024, May 8). *Vietnam's banks spearhead green credit initiatives*. <https://tuoitrenews.vn/news/business/20240508/vietnams-banks-spearhead-green-credit-initiatives/79752.html>
- United Nations Framework Convention on Climate Change. (2015). *Paris Agreement*. [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)
- United States Geological Survey. (2022, January). *Cement. Mineral Commodity Summaries*. <https://pubs.usgs.gov/periodicals/mcs2022/mcs2022-cement.pdf>
- Viet Hang. (n.d.). *Cơ chế CBAM của EU: Tác động và sự thích ứng của ngành Thép* [EU's CBAM: Effects and adaptation of Vietnam's steel industry]. VnSteel. <https://vnsteel.vn/tin-thi-truong-thep/co-che-cbam-cua-eu-tac-dong-va-su-thich-ung-cua-nganh-thep-6712.html>
- Vietnam Aluminum Profile Association. (n.d.). *Overview and development strategies for aluminum sector in Vietnam* [Presentation]. [https://wtocenter.vn/file/19045/03\\_aluminiumoverview-and-development-strategies-for-aluminium-sector-in-vietnam\\_vaa.pdf](https://wtocenter.vn/file/19045/03_aluminiumoverview-and-development-strategies-for-aluminium-sector-in-vietnam_vaa.pdf)
- Vietnam Aluminum Profile Association. (2023). *Hiện trạng và định hướng phát triển ngành nhôm Việt Nam* [Current status and development orientation of Vietnam's aluminum industry]. Trung tâm WTO [WTO Centre]. (2023). [https://trungtamwto.vn/file/22341/03\\_nhomhien-trang-va-dinh-huong-nganh-nhom-viet-nam\\_vaa.pdf](https://trungtamwto.vn/file/22341/03_nhomhien-trang-va-dinh-huong-nganh-nhom-viet-nam_vaa.pdf)
- Vietnam Association for Building Materials. (2023, September 30). *Xuất khẩu xi măng của Việt Nam ít chịu tác động bởi cơ chế CBAM* [Vietnam's cement exports are less affected by the CBAM mechanism]. <http://hoivlxtdvn.org.vn/news/xuat-khau-xi-mang-cua-viet-nam-it-chiu-tac-dong-boi-co-che-cbam-497928.html>
- Vietnam Cement Association. (2023). *Hiện trạng và định hướng phát triển của ngành công nghiệp xi măng Việt Nam* [Current status and development orientation of Vietnam's cement industry]. Trung tâm WTO [WTO Centre]. [https://trungtamwto.vn/file/22340/04\\_xi-manghien-trang-va-dinh-huong-nganh-xi-mang-viet-nam\\_vnca.pdf](https://trungtamwto.vn/file/22340/04_xi-manghien-trang-va-dinh-huong-nganh-xi-mang-viet-nam_vnca.pdf)
- Vietnam Financial Times. (2024, May 16). *Xuất khẩu sang EU: Doanh nghiệp phải quan tâm đầu tư yếu tố xanh* [Exporting to the EU: Businesses must pay attention to investing in green factors]. CIIS. <https://www.hoinhap.org.vn/phan-tich-binh-luan/thi-truong/50902-xuat-khau-sang-eu-doanh-nghiep-phai-quan-tam-dau-tu-yeu-to-xanh.html>



Vietnam Steel Association. (2023a). *Tình hình thị trường thép Việt Nam tháng* [Vietnam's steel market in December 2022 and the whole 2022]. *Vietnam Steel Association Newsletter*. <http://vsa.com.vn/tinh-hinh-thi-truong-thep-viet-nam-thang-12-2022-va-nam-2022/>.

Vietnam Steel Association. (2023b, April 14). *Tổng quan ngành thép Việt Nam trong xu hướng trung hoà carbon* [Overview of Vietnam's steel industry in the carbon neutral trend]. Trung tâm WTO [WTO Centre]. [https://trungtamwto.vn/file/22342/02\\_theptong-quan-nganh-thep-va-xu-huong\\_vsa-14.WTO04.2023.pdf](https://trungtamwto.vn/file/22342/02_theptong-quan-nganh-thep-va-xu-huong_vsa-14.WTO04.2023.pdf).

VREnergy. (2024, March 25). *What is a carbon footprint: A detailed explanation*. <https://vrenergy.vn/en/what-is-a-carbon-footprint-a-detailed-explanation/#main>

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