

**IMPACT OF THE CARBON BORDER ADJUSTMENT  
MECHANISM ON EXPORT ENTERPRISES IN VIETNAM**



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**Development and Policies Research Center**  
**DEPOCEN**

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## **1. INTRODUCTION**

Climate change has emerged as one of the biggest global challenges, underlining the priority to regulate greenhouse gas emissions. The Carbon Border Adjustment Mechanism (CBAM) is a crucial tool for reducing greenhouse gas emissions, impacting businesses engaged in the production and export of goods. CBAM is a mechanism proposed by the European Union to ensure that imported products also adhere to environmental and greenhouse gas standards similar to those applied to domestically produced products. This is part of the EU's efforts to combat climate change and achieve the goals outlined in the *“European Green Deal”*<sup>1</sup>.

CBAM significantly affects the export enterprises of many countries, including Vietnam, which must adapt to new environmental standards to continue exporting products to the EU market.

Vietnam has committed to reducing greenhouse gas emissions and participating in global efforts to mitigate the negative impacts of climate change. Vietnamese export enterprises need to adapt to CBAM in alignment with EU requirements by improving resource and energy efficiency, reducing greenhouse gas emissions, and implementing environmental protection measures in production. Meanwhile, the government and relevant stakeholders may need to implement policies and provide support to assist businesses in adapting to these changes.

This research report focuses on understanding the impact of CBAM on export enterprises in Vietnam and its connection to the growing challenges of climate change. The report specifically addresses two objectives: (1) Analyzing the impact of CBAM on Vietnamese export enterprises, and (2) Evaluating the level of business adaptation and the influence of CBAM policies on the business strategies and production models of these enterprises.

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<sup>1</sup> The European Green Deal (EGD) is a comprehensive and long-term program of the European Union (EU) aimed at addressing urgent global climate issues by 2050. Adopted on January 15, 2020, the EGD shapes the EU's strategy to achieve the target of net-zero greenhouse gas emissions and transform into an economy using fewer natural resources by 2050.

## **2. METHODOLOGY**

A synthetic approach to relevant research on the Carbon Border Adjustment Mechanism (CBAM) is employed, focusing on evaluating the impact of CBAM on export businesses. Through a review of previous studies, an assessment will be conducted to gauge the current understanding of how Vietnamese export enterprises have been adapting to environmental and climate change policies, particularly in the context of CBAM.

Policy analysis methods are also applied to examine and analyze the prevailing EU's policies on climate change and CBAM. This encompasses a detailed examination of CBAM implementation and an assessment of its impact on Vietnamese export businesses. By understanding the complexities of CBAM, Vietnamese export enterprises can position themselves to leverage the opportunities and overcome the challenges presented by this transformative policy.

## **3. OVERVIEW OF THE CARBON BORDER ADJUSTMENT MECHANISM**

### ***Agreement on CBAM***

The Carbon Border Adjustment Mechanism (CBAM) is a regulation announced by the European Commission on July 14, 2021, that puts a price on carbon emissions for certain goods imported into the European Union (EU). CBAM is designed to address the issue of CO<sub>2</sub> emissions in international trade and seeks to minimize the impact of climate change on the global economy.

CBAM was unanimously agreed upon by the three main institutions of the European Union (the European Commission, the European Parliament, and the European Council) on June 22, 2022. Negotiations on the final act of CBAM began on July 11, 2022 and concluded with a provisional agreement on December 13, 2022. The provisional agreement was issued on February 8, 2023, and later on April 18, 2023, the European Parliament officially approved CBAM, followed by the approval of the European Council on April 25, 2023 (European Commission, 2023).

CBAM will impose import fees on goods with emissions equivalent to the carbon price applied within the EU's domestic market through the EU Emissions Trading System (EU ETS). This price is determined based on the carbon emissions of the

product, calculated from the production process. The EU will levy carbon taxes on goods exported to this market based on greenhouse gas emission intensity in the production process in the country of origin starting in 2026.

### ***Role and Objectives of CBAM***

CBAM is designed to prevent carbon leakage, the phenomenon of companies reacting to carbon levies by relocating production to countries with less stringent climate change policies. By increasing costs for imported products with high carbon emissions, CBAM aims to encourage non-EU manufacturers to comply with climate standards equivalent to those in the 27 EU member countries (European Commission, 2023).

CBAM is considered an effective tool to create a level playing field for EU manufacturers and importers, reducing the competitive challenges faced by the EU industry in the global market. From a cross-border perspective, CBAM aims to balance greenhouse gas emission costs within and outside the EU, complementing the EU Emissions Trading System (EU ETS) and requiring importers to certify based on the greenhouse gas emission intensity of their products. CBAM is expected to generate billions of euros in revenue for the EU, supporting climate change goals, such as investments in renewable energy and energy efficiency (UNCTAD, 2021).

### ***Scope and Implementation Procedure of CBAM***

CBAM will be implemented in two phases: a transitional phase starting from October 2023 and an effective phase from 2026. During the 3-year transition phase starting on October 1, 2023, CBAM will apply to specific industries. The effective phase from 2026 onwards will extend CBAM's application to all industries and products, marking a new era in global trade regulations aimed at reducing global emissions and creating a fair competitive environment (Chu Hoang Long & Do Nam Thang et al., 2023).

On October 1, 2023, CBAM officially applies to six industries: iron and steel, cement, aluminium, fertilizers, electricity, and hydrogen<sup>2</sup>, as part of a three-phase

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<sup>2</sup> The hydro industry is associated with the production and utilization of hydropower as an energy source. Hydropower can be generated from renewable energy, fossil fuels, or natural gas. However, the hydro production process may generate CO<sub>2</sub> emissions due to the use of fossil energy. To reduce carbon emissions,

plan under the EU Green Deal to reduce the region's greenhouse gas emissions by at least 55% by 2030 by 55% by 2030 (Vuong Quan Hoang et al., 2023). During the transitional phase, exporters to the EU under the new regulations will only need to declare the amount of greenhouse gas emissions (GHG), both direct and indirect, without facing any financial obligations or adjustments (Tran Vu Trung, 2023). Importers must submit CBAM reports containing information about the goods one month after the end of each quarter, the first deadline will be at the end of January 2024. CBAM reports include: (i) Quantity of each type of goods in MW/h or tonnes; (ii) Total integrated emissions in the goods by type; (iii) Any carbon prices/taxes payable in the country of origin for the integrated emissions in the imported goods, considering any refunds and other compensations (if applicable). Importers can be subjected to penalties, calculated based on the average carbon intensity of the least efficient 10% of manufacturers in the EU if exporters cannot provide carbon intensity data (ADB Briefs, Nov 2023).

From 01/01/2026, CBAM will be fully implemented, and gradually phase out the free Emission Trading System (ETS) allowances of the European Union (EU). Businesses importing goods into the EU under CBAM will be required to purchase CBAM Certificates. To carry out this process, importers must use a CBAM account on the EU-licensed CBAM registry. CBAM declarants, licensed by the EU, are responsible for declaring and submitting corresponding CBAM Certificates for the integrated emissions in the goods imported in the previous year to the CBAM system before May each year. A CBAM declarant can represent multiple importers. CBAM declarations must include the following information: (i) Quantity of each type of goods in MW/h or tonnes; (ii) Total integrated emissions in the goods by type, assessed under the law; (iii) Total number of CBAM Certificates to be submitted, corresponding to the emissions of the goods minus any carbon prices/taxes payable in the country of origin; (iv) A copy of the assessment report issued by the assessing unit. The price of Certificates will be determined based on the average weekly auction price of EU ETS allowances, represented in €/tonne of CO<sub>2</sub> emissions. In

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the EU applies the Carbon Border Adjustment Mechanism (CBAM) to the hydro sector, promoting the production of green hydro from renewable energy.

case importers can demonstrate, based on verification information from the third-country producers, that carbon prices have been paid during the production of the imported goods, they may deduct the corresponding amount from their final invoice.

During the period from 2026 to 2034, businesses will purchase a CBAM Certificate for each tonne of equivalent CO<sub>2</sub> in the product. The EU will gradually phase out the allocation of free carbon import quotas. The gradual transition from free allocation in EU ETS will occur simultaneously with the implementation of CBAM during the 2026-2034 period (Table 1).

**Table 1: ETS free quotas according to the operational phases of CBAM**

Operation phase	2026	2027	2028	2029	2030	2031	2032	2033	2034
ETS free quotas (%)	97.5	95	90	77.5	51.5	39	26.5	14	0
CBAM (%)	2.5	5	10	22.5	48.5	61	73.5	86	100

*Source: European Parliament (2022).*

### ***Impacts of CBAM and its compatibility with WTO***

CBAM has attracted mixed attention and reactions from stakeholders. Despite being considered a significant step towards fair and sustainable trade, it has raised concerns about negative impacts on international trade relations and increased disparities between developed and developing countries.

On the one hand, CBAM offers several significant benefits. Firstly, it creates a level playing field for businesses within the EU, prevents carbon leakage and encourages compliance with stringent climate standards. Additionally, CBAM generates substantial revenue for the EU, facilitating the increasing investment in renewable energy and emissions reduction.

On the other hand, the introduction of CBAM poses different challenges and concerns relating to global trade. Some exporting countries, especially developing nations, express concerns that CBAM may create trade barriers and impact international trade relations by fostering protectionism, damaging trust in international trade, and hindering the UNFCCC principle of “common but differentiated responsibility”. There are also concerns that CBAM may interrupt the



activities of the World Trade Organization (WTO), raising questions about its compatibility and fairness in global trade (ISEAS-Yusof Ishak Institute, 2023).

The significance of compliance with WTO regulations has been emphasized ever since the introduction of the CBAM. The EU asserts that CBAM is designed in accordance with WTO rules and is not intended as an unfairly protective measure. However, some countries and trade experts argue that there are still numerous legal and political challenges that need to be overcome to ensure fairness and compliance with the WTO, such as compatibility with the principles of Most-Favored Nation (MFN) treatment, National Treatment (NT), tariff provisions, and non-tariff provisions within the WTO's General Agreement on Tariffs and Trade (GATT) (ISEAS-Yusof Ishak Institute, 2023).

#### **4. LITERATURE REVIEW**

Studies on the Carbon Border Adjustment Mechanism (CBAM) have provided crucial information on the global impacts of CBAM on countries and businesses. Research has focused on various topics, including the impact of CBAM on achieving emission reduction commitments, the relationship between CBAM and carbon emissions in specific countries, as well as its potential challenges and risks.

Some studies have concentrated on the correlation between CBAM and achieving emission reduction commitments, emphasizing the supportive role of CBAM in reducing countries' greenhouse gas emissions. The study by Yen-Hui Kuo and Shu-Ching Chou (2023), examining the relationship between CBAM and carbon emissions in Taiwan, infers significant positive impacts in certain industries but highlights financial and payback time challenges.

The research by Chu Hoang Long & Do Nam Thang et al. (2023) within the scope of Vietnam indicates substantial impacts of CBAM on sectors like steel and aluminum, affecting not only the economy but also Vietnam's climate policies and climate change mitigation goals.

Melinda Martinus and Kanin Laopirun's study (2023) emphasises the potential trade disputes within the WTO due to CBAM, posing risks during implementation in the ASEAN region. The study suggests that the EU should apply more flexible CBAM

deployment methods in ASEAN, considering political, strategic, economic development, and capacity risks, as well as the climate goals of each ASEAN country.

Weko, S., Eicke, L., Marian, A., & Apergi, M. (2020) evaluate the global impact of CBAM, and highlight the risks of declining exports in developing countries due to the lack of sufficient resources to adapt to low-carbon , hence stressing the need to provide adequate support and policies adjustments to countries at risk.

The United Nations Conference on Trade and Development (UNCTAD) study (2021) proposes using CBAM revenue to support developing countries in building cleaner production capabilities and simultaneously greening their economies, hoping to minimize negative impacts and promote global trade opportunities.

In summary, existing studies reveal that while CBAM yields positive impacts, it poses several potential challenges and risks, especially for developing countries like Vietnam. Despite the diversity in global CBAM research, there is a need for further in-depth studies to understand the impact of the Carbon Border Adjustment Mechanism on Vietnam's export enterprises. Moreover, research should delve into the specific economic and international trade consequences of CBAM on enterprises across various industries and regions in Vietnam, in order to provide a comprehensive and accurate understanding of its influence on the country's international economic activities.

Studies on the impact of the Carbon Adjustment Mechanism in Vietnam should also takes in to account factors such as energy price fluctuations, supply and demand sources, and market factors that may affect the CBAM impact. Additionally, businesses' reactions based on industries, scale, and financial capabilities should be examined along with the costs and effectiveness of businesses when transitioning production and operations to meet CBAM requirements.

Moreover, with regard to research methodologies, both Computable General Equilibrium (CGE) and partial equilibrium models can be applied in similar studies to assess and analyze the repercussions of the CBAM mechanism. The CGE model relies on dynamic factors to project forecasts for the new equilibrium point across the entire market. It tackles the overarching market equilibrium issue by solving equations and pinpointing a precise equilibrium point or a range between supply and demand. Conversely, the partial equilibrium model delves into the impact on a

specific commodity market (typically at the industry level), concentrating on a singular product/market or a small cluster of products/markets. As a result, the partial equilibrium model allows for a more in-depth analysis at the level of detailed industry sub-sectors compared to the CGE model.

## **5. IMPACT OF THE CARBON BORDER ADJUSTMENT MECHANISM ON VIETNAM**

Currently, the EU stands as Vietnam's third-largest export market, with export turnover reaching USD 46.83 billion in 2022, marking a 16.7% increase from 2021, thanks to the EVFTA agreement. This upward trend in Vietnam's exports to the EU are expected to continue in the foreseeable future (Vuong Quan Hoang et al., 2023). However, without adequate preparation for CBAM, Vietnam may face significant challenges as commodity costs rapidly rise due to additional carbon taxes. This not only applies to the EU market but also to other major markets such as the United States, Japan, South Korea, China, which are planning to implement carbon adjustment mechanisms similar to CBAM.

The primary challenge for Vietnamese exporters is meeting the increasingly stringent green standards of the EU market. These standards are continually evolving and are supplemented with ever-increasing requirements. Export-oriented businesses from Vietnam may incur additional carbon costs in production for goods exported to the EU market, leading to increased production costs and affecting the final product's pricing. The initial investment costs to improve energy efficiency and reduce carbon emissions may pose a particular challenge for small and medium-sized enterprises (SMEs) and exert pressure to increase production costs, impacting the pricing and competitiveness of Vietnamese products in the international market, especially in low-profit-margin industries.

A survey conducted in 2022 by the Private Economic Development Research Board (IV Board, under the Government's Administrative Procedure Reform Advisory Council) revealed that only about 11% of enterprises are well-informed about the CBAM mechanism, while 53% remain unaware, and 36% have heard of the mechanism but lack clarity. While foreign direct investment (FDI) enterprises have

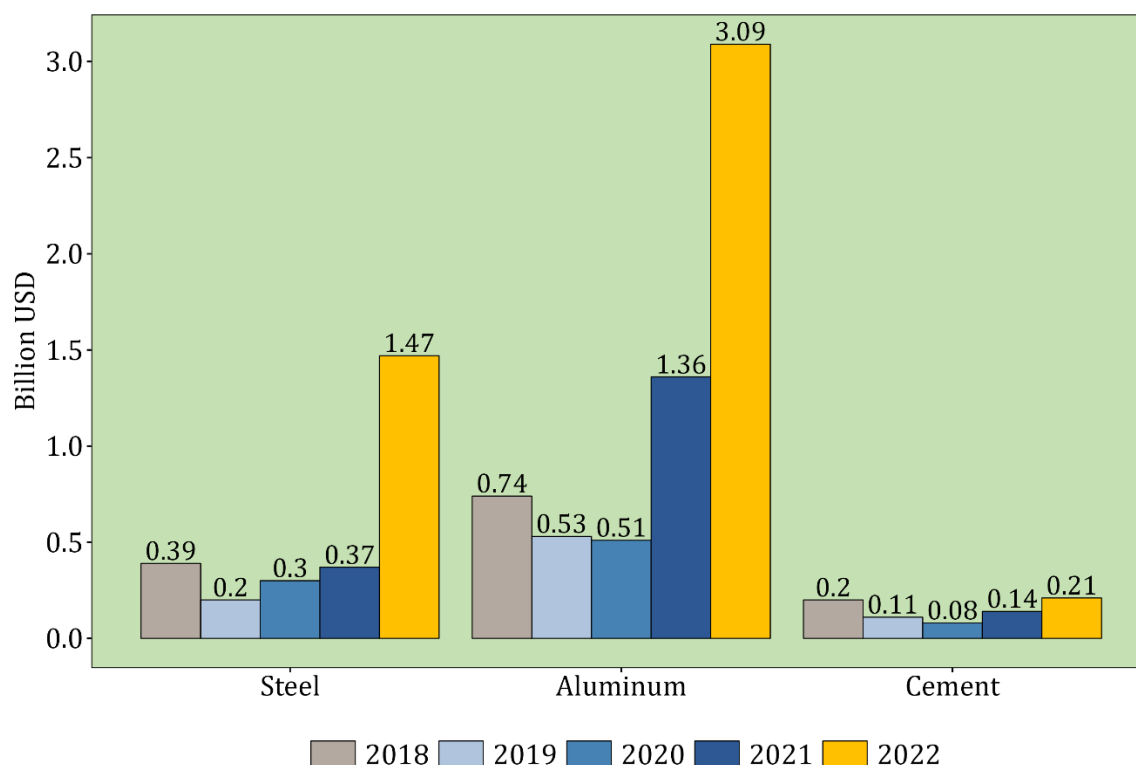
proactively adapted, many private enterprises in Vietnam, especially SMEs, still display hesitancy or lack resources regarding the transition to green production (VCCI, 2023).

The impact of CBAM on the general Vietnamese economy is relatively minor. However, for specific industries and businesses, the reduction in export value could pose a challenge. CBAM is currently directly affecting four key industries in Vietnam: steel, cement, fertilizers, and aluminum. The power industry, which is not a significant exporter, and hydro, with negligible exports, are not directly impacted. While these industries may not be the strengths of Vietnam's exports to the EU in the short term, the application of CBAM could increase the prices of exported goods, reduce competitiveness, and impact demand in the EU market (Chu Hoang Long & Do Nam Thang et al., 2023).

In 2021, the EU imported CBAM-applied products worth USD 98.3 billion, accounting for 0.4% of global trade. China is the primary exporter (14.9%), followed by Germany (7%), Russia (5.5%), Japan (4.2%), and South Korea (4.1%). Vietnam ranks 12th, exporting goods valued at USD 2.3 billion, accounting for 2.3% of the total CBAM import value of the EU (Chu Hoang Long & Do Nam Thang et al., 2023).

Vietnam does not play a significant role in the global CBAM market, except for cement. In 2022, Vietnam ranked third in cement production capacity (after China and India) (Statista, 2023); first in Southeast Asia and 13th globally in steel production (Worldsteel Association, 2023). Vietnam exported 58% of steel, 27% of aluminum, 36% of cement, and 14% of fertilizers in 2021. However, except for cement, the quantity of Vietnam imports exceed that of exports in these sectors as they rely on imported raw materials or products that Vietnam does not produce. Consequently, Vietnam frequently experiences trade deficits in the steel, aluminum, and fertilizer industries (Chu Hoang Long & Do Nam Thang et al., 2023).

**Figure 1: Vietnam’s export turnover of steel, aluminum and cement to the EU in the period of 2018 - 2022**



Source: International Trade Centre (ITC).

Vietnam contributed 18.8% to the global cement export value in 2021. However, the figures for steel were only 2.5%, and for aluminum and fertilizers, they were less than 1%. In the EU market, Vietnam holds a modest market share of 5.1% (equivalent to USD 2,971 million) for steel, 4.7% (or USD 21 million) for cement, and 0.6% (or USD 138.6 million) for aluminum. Vietnam did not export fertilizers to the EU in 2021 (UNCOMTRADE, 2023).

According to the research by Chu Hoang Long & Do Nam Thang et al. (2023), the implementation of the Carbon Border Adjustment Mechanism (CBAM) in the EU market will negatively impact Vietnam's steel, aluminum, fertilizer, and cement sectors. In the steel industry, where the EU accounts for 5%-10% of Vietnam's export market, CBAM is expected to reduce production by around 0.8% and export value by approximately 3.6% by 2030. This impact may drive Vietnam to export steel to other markets to compensate. In the aluminum sector, assuming the EU constitutes 3%-12% of the export market, CBAM is projected to decrease production by about 0.4% and export value by around 4.3% by 2030. Regarding fertilizers, the impact of CBAM

is considered minimal due to minimal exports to the EU. In the cement sector, where the EU represents about 1% of the export market, CBAM is expected to have a mild negative impact.

**Table 2: Estimated economic impacts of CBAM (3/2023 version) in 2030<sup>3</sup>**

	Steel	Aluminium	Fertiliser	Cement
<b>Change in production output (%)</b>	-0.8 [-1.7; -0.0]	-0.4 [-0.8; -0.0]	-0.0 [-0.0; -0.0]	-0.1 [-0.2; -0.0]
<b>Change in export value (%)</b>	-3.7 [-5.5; -0.4]	-4.3 [-5.7; -0.7]	-0.0 [-0.0; -0.0]	-0.6 [-0.8; -0.2]
<b>Change in import value (%)</b>	-0.3 [-1.3; +0.8]	-0.1 [-0.7; +0.4]	-0,0 [-0,0; -0,0]	-0.1 [-0.4; -0.0]
<b>Change in emission quantity (mil tCO2)</b>	-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: Chu Hoang Long & Do Nam Thang et al., 2023.*

Chu Hoang Long & Do Nam Thang et al. (2023) estimated the impact on macroeconomic indicators, showing that if CBAM is only applied by EU countries, the estimated GDP reduction could be around USD 0.1 billion in 2030 and USD 0.2 billion in 2035. If carbon pricing is implemented alongside EU-CBAM and emission intensity remains unchanged, the estimated GDP reduction could be USD 6.4 billion in 2030 and USD 11.1 billion in 2035.

**Table 3: Estimated economic impacts of CBAM (3/2023 version) in 2030**

	Steel CBAM + Carbon Pricing	Aluminium CBAM + Carbon Pricing	Cement CBAM + Carbon Pricing
<b>Change in output (%)</b>	-5.1 [-9.6; -0.4]	-9.3 [-18.1; -1.0]	-32.9 [-70.6; -3.3]

<sup>3</sup> The symbol “-“ signifies a “decrease” compared to the baseline development trend when CBAM comes into effect in 2026; the symbol “+” indicates an “increase”.

In brackets “[ ]” represents a 95% confidence interval, and values outside “[ ]” are average estimates. - 0.0 and +0.0 (if applicable) imply an increase or decrease with an absolute value less than 0.05.

<b>Cost of emissions (billion USD)</b>	+1.2 [+1.1; +1.3]	+0.6 [0.5; +0.6]	+1.8 [+1.3; +2.2]
<b>Change in emission levels (million ton of CO2)</b>	-5.5 [-10.2; -0.4]	-4.6 [-8.4; -0.5]	-48.5 [-86.0; -6.6]

Source: Chu Hoang Long & Do Nam Thang et al., 2023.

If CBAM and carbon pricing drive energy transition and emission intensity reduction, the negative impact could slightly decrease from a 1% GDP reduction to 0.8% in 2030 and from a 1.2% GDP reduction to 0.9% in 2035 (Chu Hoang Long & Do Nam Thang et al., 2023). This suggests the need for a comprehensive review of carbon pricing policies within the broader context of energy transition and low-carbon development.

## 6. POLICY IMPLICATIONS FOR VIETNAM

Vietnam faces numerous opportunities and challenges in adapting to the European Union's Carbon Border Adjustment Mechanism (CBAM) aimed at reducing greenhouse gas emissions. The opportunities lie in using CBAM as a tool to quickly enhance emission reduction regulations, promote the carbon market, and support international cooperation and the transition to renewable energy. Vietnam needs to leverage support policies from international partners, especially within the framework of the EU-Vietnam Free Trade Agreement (EVFTA).

However, Vietnam also confronts the challenge that CBAM is still evolving and subject to various uncertain factors such as carbon market prices and the scope of application. Accepting CBAM may increase initial production costs and face resistance from domestic consumers due to potential energy price hikes. Vietnam needs to expedite the development of legal frameworks and policies to comply with CBAM, avoiding adverse impacts on businesses' emission standards compliance. The risk of "carbon leakage" is also a concern, where polluting industries might relocate projects to developing economies to evade CBAM.

To help businesses adapt to CBAM and mitigate the impact of climate change, Vietnam has implemented a series of policies, including its commitment to achieving

net-zero emissions by 2050 at COP26, participation in the Just Energy Transition Partnership (JETP) with international partners to attract resources for a fair energy transition in Vietnam. The National Assembly has enacted the Environmental Protection Law in 2020, with amendments and additions in 2022. Moreover, the Government has issued Decision No. 1658/QĐ-TTg approving the National Green Growth Strategy for 2021-2030 with a vision to 2050 and and Decision No. 896/QĐ-TTg approving the National Climate Change Strategy until 2050. It also approved Decree 06/2022/NĐ-CP “Regulations on greenhouse gas emission reduction and ozone layer protection“, outlining the roadmap for development and implementation of the domestic carbon market. Decision 01/2022/QĐ-TTg "Issuing a list of sectors and facilities emitting greenhouse gases required to conduct greenhouse gas inventories" was enacted, specifying that 1,912 facilities emitting more than 3,000 tons of CO<sub>2</sub> annually are obligated to undertake greenhouse gas inventory. The Ministry of Natural Resources and Environment issued Circular 17/2022/TT-BTNMT, regulating technical standards for measuring, reporting, assessing greenhouse gas emission reductions, and conducting greenhouse gas inventory in waste management.

Moreover, the Ministry of Industry and Trade has conducted extensive outreach activities to disseminate these policies to the business community. The government, trade departments, and local authorities have collaborated with relevant agencies to organize training sessions and workshops on complying with greenhouse gas emission reduction regulations, especially regarding new issues such as greenhouse gas inventory and establishing measurement, reporting, and verification systems.

Vietnam has substantial potential in renewable energy, including solar and wind power, leading the ASEAN region in wind and solar power installations since 2019. This not only promotes energy source diversification but also highlights Vietnam's commitment to addressing global climate change challenges. Despite these potentials, Vietnam still faces significant challenges. Currently, data on enterprise-level emissions in Vietnam is lacking, limiting monitoring, reporting, and verification capabilities. Moreover, relevant legal regulations on carbon pricing and energy transition, although existing, are not yet at the desired level of completeness. Budget



constraints are also a significant challenge, limiting state resources for investments in renewable energy.

To minimize the negative impact of the Carbon Border Adjustment Mechanism (CBAM) on Vietnam's exports to the EU, Vietnam needs to focus on reducing emission intensity in each CBAM-affected sector. In the steel sector, Vietnam can reduce 11.49 million tons of CO<sub>2</sub>e<sup>4</sup> by improving steel production technologies (BFBOF and EAF) and requires an investment of approximately USD 303.3 million (Chu Hoang Long & Do Nam Thang et al., 2023). It is essential to establish clear plans and strategies for the steel industry, along with the establishment of national standards and policies to encourage the adoption of clean production technologies. In the aluminum sector, Vietnam needs to develop a comprehensive plan and strategy for the industry, create a domestic value chain, and enhance awareness of emission reduction when exporting to the EU. Regarding fertilizer sector, it is crucial to conduct detailed research on emission intensity and implement mitigation measures. Additionally, targets and mitigation measures should be incorporated into national technical standards. In the cement sector, Vietnam should streamline procedures and support policies for waste heat recovery projects, focus on research and development to improve efficiency and reduce CO<sub>2</sub> emissions in cement production.

In response to the impact of the Carbon Border Adjustment Mechanism (CBAM) on Vietnam's export businesses, the government needs to provide proactive and comprehensive measures and propose policies to protect and promote the export-oriented economy. Policies related to CBAM need to be flexibly and periodically reviewed and adjusted to best conform to the specific needs and conditions of the country. The following are important policy implications for Vietnam:

1. Emission reporting and training on enterprise level: The Vietnamese government can issue detailed guidelines on emission reporting and provide training for enterprises to enable them to comply with CBAM and adapt to the challenges of the export market. Enterprises also need to adjust their business

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<sup>4</sup> CO<sub>2</sub>e (carbon dioxide equivalent): a measurement unit representing the total greenhouse gas emissions from all types of emitted gases in a given process, expressed in terms of their equivalent impact to the amount of CO<sub>2</sub>.

strategies to minimize potential impacts from CBAM. Currently, only about 11% of businesses are well-informed about CBAM, posing a challenge to preparation and adaptation of businesses.

2. Dialogue with the European Union (EU): The government should actively engage in dialogues with the EU to clarify and discuss specific details of CBAM. This process will not only help alleviate negative impacts on Vietnamese exporters but also create opportunities to achieve mutually beneficial agreements, such as specific exemptions or compensation agreements to minimize CBAM's impact on Vietnam's industries. Cooperation with the EU and other countries affected by CBAM will enhance Vietnam's negotiation capabilities and garner international support. Participation in agreements like the Just Energy Transition Partnership (JETP) can provide valuable technical and financial support.

3. Establish or designate a CBAM coordination agency: Designating a coordination agency for CBAM, providing detailed guidance on emission reporting and training, and educating businesses are crucial. Technical and institutional preparation will help enterprises understand and efficiently comply with CBAM regulations, thereby minimizing negative impacts.

4. Enhance collaboration with other partners: Vietnamese businesses can strengthen collaboration with other partners such as the United States, Japan, South Korea, Australia, Canada, and other Southeast Asian countries to explore export opportunities and minimize the impact of export activities on the environment.

5. Carbon pricing: Applying carbon pricing in a broader context is essential to reshape the energy transition process and promote innovation in carbon-intensive sectors. Carbon pricing can be a useful tool to accelerate the carbon elimination process and achieve Net Zero commitments by 2050.

6. Increase productivity and energy efficiency: Vietnam needs to enhance productivity and energy efficiency in the production process, especially in industries significantly affected by CBAM, such as steel, aluminum, cement, and fertilizers. The government and businesses can jointly invest in new technologies and production processes to reduce emissions and energy costs. Additionally, optimizing production processes and supply chain management can reduce emissions and costs while

enhancing competitiveness. Developing and promoting high environmentally performing products can help businesses attract consumers and leverage market trends.

7. Human resource training and development: The government should invest in training and developing a specialized workforce in environmental management, clean technology, and green standards to meet international market requirements. Attracting foreign investment in clean and energy-saving industries is also crucial for improving production capacity and reducing emissions.

8. Invest in infrastructure and logistics systems: Building efficient infrastructure and logistics systems to minimize transportation costs and optimize the production process is necessary. The government can invest in improving transportation infrastructure and support businesses in implementing energy-efficient transportation solutions, thereby reducing carbon emissions from the transportation of goods.

9. Research and development of green technology: The government needs to strengthen the research and development capacity of green technology for businesses to reduce greenhouse gas emissions and alleviate the pressure of CBAM on industries. Supportive policies and incentives for investing in research and development will help businesses enhance competitiveness and comply with environmental standards.

10. Encourage the use of renewable energy: The government and businesses should promote the use of renewable energy and gradually phase out fossil fuels. Simultaneously, the government needs to consider updating the legal framework to address the impact of CBAM and encourage businesses to invest in clean technology research and development, promoting a green transition in businesses.

11. Adopt new environmentally friendly technologies and production processes: Enterprises need to invest in and apply new technologies to enhance energy efficiency and reduce greenhouse gas emissions. Collaboration between businesses and the government and industry organizations can provide support and promote climate change mitigation measures. The government needs to encourage businesses to transition to more environmentally friendly production models,

focusing on environmentally friendly production processes and the use of recycled materials.

These policy implications will help Vietnam efficiently adapt to the European Union's Carbon Border Adjustment Mechanism (CBAM), creating a sustainable business environment and minimizing negative impacts on export-oriented businesses.

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## **Regulations on Information Disclosure**

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