Proceedings of the 2nd International Conference on Interdisciplinary Humanities and Communication Studies
DOI: 10.54254/2753-7048/27/20231228

# *Implementation of the EU's CBAM under the WTO Rules: Process, Relations, Responses*

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***Abstract:*** The European Union (EU), a global leader in carbon reduction measures, formally adopted its proposed Carbon Border Adjustment Mechanism (CBAM) in April 2023. However, it may not comply with existing WTO rules due to its design flaw. Thus, it may be viewed as a new trade barrier, which may result serious legal issues and trade disputes regarding the compatibility of CBAM with the trade rules of the General Agreement on Tariffs and Trade (GATT) under the World Trade Organization (WTO). In practice, however, the adoption and implement of CBAM has not been prevented by these conflicts. Therefore, this article attempts to explore this contradiction and evaluate the impact of CBAM on WTO rules. Eventually, this article concludes that CBAM as an attempt to put forward environmentally friendly trade rules may promote updating WTO rules under international consensus of carbon reduction. The focus of this article will be discussed by providing a systematic review of the process and content of CBAM, examining the relationship between the CBAM and WTO rules and analysing the responses to CBAM of other countries.

***Keywords:*** Carbon Border Adjustment Mechanism, General Agreement on Tariffs and Trade, carbon border tax, World Trade Organization

## 1. Introduction

For coping with the serious global warming phenomenon, international society have formed a consensus about making efforts to reduce global greenhouse gas emissions and achieve carbon neutrality[1]. However, there is an inevitable gap in the implementation of Emission reduction policies due to uneven economic input, technology level and environment awareness among countries. These differences may weaken the competitiveness of the relevant industries in the countries where need to bear the higher emission reduction costs. Therefore, carbon tariffs have been proposed by these countries as a solution to achieve reciprocal reduction.

The European Union (EU) has been a strong supporter of carbon tariffs. In 2008, the European Union endeavoured to include international aviation companies in its carbon emissions trading system (ETS) but eventually failing due to opposition from the United States, China, Russia, the Arab Republic and some other countries. In July 2019, the new European Commission President, von der Leyen, reintroduced the carbon tariff in her policy programme and proposed the establishment of a

[1] More than 145 countries and regions have proposed carbon neutrality goals, and the specific list can be found in https://eciu.net/netzerotracker.

DOI: 10.54254/2753-7048/27/20231228

Carbon Border Adjustment Mechanism (CBAM) in the *European Green Deal* to address climate change and promote sustainable development. After two years of system design and scrutiny, the proposal to establish CBAM was formally submitted to the European Parliament and the Council in July 2021, which formally launched the legislative process for the CBAM mechanism. Despite opposition from some developing countries during this period, the Carbon Border Adjustment Mechanism (CBAM) was finally approved by the European parliament in April 2023 and become the first proposal trying to realise reciprocal emission reductions in the form of a carbon border tax in the world. However, in terms of the compatibility between CBAM and the General Agreement on Tariffs and Trade (GATT) under the World Trade Organization (WTO), there may be legal conflicts and trade disputes.

The CBAM as the first carbon tariff system to be implemented has been widely debated in international society. On the one hand, some developed countries with similarly high emission reduction costs like United Kingdom and United States may support and emulate this mechanism. On the other hand, it is likely to be opposed by developing countries with relatively low emission reduction costs such as China and Brazil. However, although it has been controversial since its introduction, it does not appear to have hindered its implementation. By reviewing the process of CBAM formation, this article attempts to analyse the purpose of implementing CBAM, examine the relationship between the CBAM and WTO rules, explore the international response to the CBAM and evaluate its possible impact on WTO rules under the multilateral trading system.

## 2. The Dual Purpose of CBAM

The CBAM is an adjustment mechanism that ensures that imports have same carbon pricing as products within European Union. By using the term “mechanism” instead of “tax”, the real intention is to show that the CBAM is compatible with WTO rules and to avoid triggering international trade disputes as much as possible.

It seems that the CBAM has two purposes from its establishment proposal: the first aim is to prevent “carbon leakage” and realise reciprocal emission reductions to ensure the competitiveness of the relevant industries in European Union; The second objective is to reduce greenhouse gas emissions and achieve carbon neutrality as part of the “Fit for 55 initiative”[2]. What’s more, it may also force other countries to introduce more stringent emission reduction measures and help achieve the global emissions reduction targets set out in the *Paris Agreement*.

### 2.1. Carbon Leakage Prevention

When one country adopts carbon emission reduction measures while the other country does not, the energy-intensive industries may be transferred to the country where have no or less stringent emission reduction measures. As a result, the ratio of carbon emissions between these countries is the “carbon leakage” [1]. This industries transfer may not make the stringent emission reduction measures effective. As a result, the total amount of atmospheric carbon emissions will not be effectively reduced. Thus, carbon leakage has become one of the most important factors affecting the achievement of global emissions reduction targets.

The European Union has always been a pioneer in establishing carbon trading market and taking carbon emission reduction measures. The European Union set up the Carbon Emissions Trading System (EU-ETS) in 2005, which allows enterprises to trade emission permits based on a set total amount of greenhouse gas (GHG) emissions. By adopting phased and progressive measures to reduce emissions, the EU-ETS strongly promotes the realisation of the emission reduction targets of the EU

[2] See https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal/fit-55-delivering-proposals_en.

DOI: 10.54254/2753-7048/27/20231228

countries. At the early stage of its implementation, the EU prevented the risk of carbon leakage by setting free allowances within the EU-ETS. Therefore, although voices supporting for carbon tariffs always exist in EU, it has been difficult to make headway. The main opposition came from the European manufacturing industry, which worried carbon tariffs may lead to trade retaliation or make their free quota cancelled. However, recent increases in carbon prices in EU-ETS have driven up the cost of emissions for some manufactures, leading to their competitiveness reduced and risk of carbon leakage increased. As carbon tariffs may offset the competitive advantage of lower carbon-priced imports. Therefore, there has been an attitude shift for the implementation of carbon tariffs in these industries. This change fuelled the formation and implementation of carbon tariffs in EU recent years.

However, the cost of carbon emissions is often closely related to emission technologies, production methods and national policies [2]. At present, only a few countries can establish an effective carbon emissions trading mechanism[3]. In fact, it seems that administrative regulations and market controls are commonly used by countries to reduce carbon emissions and thereby it looks like difficult to accurate gauge the cost of carbon emissions in products only based on carbon pricing. Therefore, although the main purpose of implementing CBAM is to prevent carbon leakage, it simplifies the cause of "carbon leakage" from "differences in carbon abatement measures between countries" to "differences in carbon pricing between countries". This could lead to the adoption of non-carbon pricing emission reduction measures by other countries being overlooked.

## 2.2. Facilitate Carbon Neutrality Achievement

The EU agreed on a new "*Green Deal*" in December 2019, aiming to make Europe the first climate-neutral continent by 2050. According to the carbon reduction targets set in "*Fit for 55*", the EU has committed to reducing carbon emissions equivalent to 50-55% of peak carbon emissions by 2030. In 2021, the European Parliament approved the resolution called "*A WTO-compatible EU carbon border adjustment mechanism*" (CBAM)[4]. This resolution demonstrates that the introduction of CBAM is a key measure in the implementation of the new "*Green Deal*". In addition, the CBAM also aims to encourage that the partners of EU are better aligned with the ambitions pursued by the EU in the climate field.

However, forcing other countries to implement the same carbon pricing as the EU-ETS may violate the principle of "common but differentiated responsibilities (CBDR) " in international cooperation on averting climate change. The 1992 United Nations Framework Convention on Climate Change (UNFCCC) stipulates this principle and distinguishes the responsibilities of different countries for carbon emission reduction by categorizing different countries (Appendices 1 and 2). In addition, it also provides that developed countries bear the legal responsibility of emission reduction and should providing support to developing countries while developing countries voluntarily bear the responsibility of emission reduction and do not need to bear the responsibility of support in the *Kyoto Protocol*[5]. Subsequently, the *Paris Agreement*, which entered into force in 2016, explicitly states the principle of "The Intended Nationally Determined Contributions (INDCs)"[6]. This principle allows countries to set different climate change targets according to their own national circumstances, which further reduces the national obligation on carbon reduction. The CBAM may break this agreement that giving countries full autonomy in carbon emission reduction on international climate cooperation. Hence, the implementation of CBAM without national consultation is likely to infringe these consensus and principles about international environmental law.

[3] See World Bank Carbon Price Dashboard, https://carbonpricingdashboard.worldbank.org/map_data.
[4] See https://oeil.secure.europarl.europa.eu/oeil/popups/printficheglobal.pdf?id=711840&l=en.
[5] See https://unfccc.int/kyoto_protocol.
[6] See https://unfccc.int/process-and-meetings/the-paris-agreement.

DOI: 10.54254/2753-7048/27/20231228

## 3. Elaborate-Designed CBAM Working Method

In 2008, the European Union attempted to apply the EU-ETS mechanism to foreign aviation enterprises by levying the aviation carbon tax, but it was boycotted by more than 20 countries due to its unilateral. To avoid boycott again, the CBAM was carefully designed trying to comply with the WTO rules. This may also be the reason why the CBAM limits the application scope, sets the buffer time, and innovates the mechanism by levying a carbon tax within the EU this time. In this way, this new design may help CBAM avoiding trade dispute and resistance in international society.

In terms of applicable objects, the CBAM mainly adopts five high-carbon emitting industries including electricity, steel, aluminum, fertilizer and cement. For implementation time, the EU sets buffer period for CBAM: in the first three year from 2023 to 2025, importers of the above five types of industries do not need to pay any fees for their imports, but need to fulfil the obligation to report on their emissions; in the after ten-year period from 2026 to 2035, the European Union will gradually reduce the free allowances in the EU-ETS by 10% a year until ultimately abolish them completely, while importers are required to pay a fee based on the carbon emissions generated during the production process of their imported products[7].

What's more, the importers need to fulfil their payment obligations by purchasing carbon certificates, the price of which needs to be aligned with the EU-ETS internal price. For the producers who have already paid the carbon price in their country, the importers of this products can get full credits for carbon price paid after submitting the evidence to the EU. As for the price of carbon permits, it based on the weekly average of the closing price in the EU-ETS. Therefore, it is quite possible that the carbon tariffs enforced by CBAM remain at a high price in the future based on prediction of the continuous increase carbon prices within the EU-ETS.

As a result, the CBAM probably raise the cost of the downstream industries related to these taxed products. As research shows that industries rely on importing these raw materials may have to reorganize their business systems for some of their products, resulting in an increase in production costs [3]. The expensive carbon price may also increase the production costs of foreign enterprises, squeeze the profit margins of export products. These impacts probably have a huge impact on high GHG product exporting countries and highly dependent on the EU for trading related products countries.

## 4. Relationship Between CBAM and WTO Rules

For more than 30 years, the EU climate policy has been seeking an "environmentally friendly trade rule" that can balance WTO rules and environmental protection. The newly launched CBAM is an attempt to this goal. In theory, however, the debate over whether CBAM complies with WTO rules has always existed. Specifically, the focus of this contention lies in the relationship between CBAM and the General Most-Favored-Nation Treatment principle, the National Treatment principle, and General Exception of General Agreement on Tariffs and Trade (GATT).

### 4.1. CBAM and General Most-Favored-Nation Treatment Principle

The paramount principle of WTO Non-Discrimination principle is commonly realized by General Most-Favored-Nation (MFN) Treatment and National Treatment. According to Article I of the GATT, the General Most-Favored-Nation Treatment principle requires that all WTO members treat "like products" no less favorably than the treatment they give the third countries at present and in the future. However, according to CBAM, goods from different countries are required to pay different tariffs

[7] See CBAM Implementing Regulation for the transitional phase, https://taxation-customs.ec.europa.eu/system/files/2023-08/C_2023_5512_1_EN_ACT_part1_v6.pdf.

DOI: 10.54254/2753-7048/27/20231228

based on their carbon emissions. Although the EU claims that this is aimed at achieving fair competition in the EU market, it may violate this article due to imposing different tariffs on the like product. Therefore, whether the carbon emissions in the production can be used as a criterion for identifying "like product" may be the prerequisite for judging whether the CBAM is in line with the General Most-Favored-Nation Treatment principle.

In this regard, some researchers suggest that the process and production method (PPM) is not directly related to the product categorization by estimating its physical characteristics, consumption attributes, tariff classification [4]. Thus, carbon emissions may not be used as a standard for judging the "like product". In addition, as the EU-ETS carbon price is the single standard for CBAM taxation, CBAM may also be considered discriminatory. Firstly, the second section of this article mentions that CBAM may overlook non-carbon price emission reduction measures of other countries and go against the CBDR principle in international environmental law. Secondly, the GATT does not provide any guidelines for measuring the carbon content of goods, so implementing CBAM according to its own standards may lead to substantial discrimination against other WTO members [5]. Thus, even if the criteria for imposing carbon tariffs were transparent, imposing different fees on imports based solely on the EU-ETS carbon price could hardly be seen as accord with the MFN principle. However, there is a view that the burden of proof to prove that it is not the "like product" may need to be borne by countries opposing CBAM [6]. In the current situation of the WTO appellate body paralyzed, this is likely to become an obstacle for countries opposing the implementation of CBAM.

### 4.2. CBAM and the National Treatment Principle

According to Article III 2 of the GATT, the National Treatment principle requires that imported products be treated no lower than the "like" domestic products in the importing country. Hence, the analysis of "like product" for article I may also a premise for adopting this principle. Furthermore, the free quotas exist within EU-ETS may also pose a risk to CBAM for breaking this principle. However, gradually abolishing and allowing imported products to be exempted this free quota and offsetting the carbon emission prices already paid for imported products in the exporting country, these measures may make CBAM comply with this principle [6].

In addition, it has also been argued that CBAM may be regarded as a domestic tax on imports. According to Article II 2(a) of the GATT, on the premise of complying with National Treatment principle, the importing country has the right to impose the same taxes (charge) on imported products as the "like" domestic products. Since the GATT does not limit the scope of this tax, the main point of controversy regarding the application of this article is whether a tax can be imposed on carbon emissions during the production process of products. This debate is mainly because energy is different from other raw materials used in the production of products. These uses are usually reflected in the final product, while energy is always consumed during the production process and disappeared in the final product. Some scholars believe that energy, like other inputs, is an indispensable input for obtaining the final product, so the tax object of this article should include carbon emissions [7]. However, even if it is reasonable to tax carbon emissions within the EU, it is still questionable whether carbon emissions outside the EU can be taxed. What's more, as the European Court of Justice once held that requiring foreign airlines to comply with the EU emissions trading directive was not a tax collection. Thus, some scholars believe that requiring companies to trade carbon emissions rights for greenhouse gas emissions may not a tax [8].

In short, the application of this article requires the EU to cancel the existing free quotas of EU-ETS. More importantly, the core issue lies in whether carbon emissions from goods can be taxed. This is related to the criteria for judging the "like product" as analysis before. The reasons for these disputes may be associated with the existing WTO rules lacking environmental concerns.

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### 4.3. CBAM and the General Exception Clause

If CBAM violates the Non-Discrimination principle of the GATT, the EU may also invoke General Exception clauses to comply with GATT rules. According to Article XX of the GATT, the CBAM is most likely to invoke clause (b) and (g).

According to Article XX (b) of the GATT, necessary trade measures aimed at protecting human, animal or plant life or health may not apply the non-discrimination principle. In terms of purpose, one of the reasons CBAM was created was to work towards moderating global warming and reducing carbon emissions. According to the Intergovernmental Panel on Climate Change (IPCC) report, climate change poses an increasingly serious threat to human well-being and the health of the Earth[8]. The Global Air Pollution Guidelines released by the World Health Organization (WHO) also shows that air pollution poses risks to human health and causes over 7 million deaths every year[9]. Thus, there may be a possibility that starting point of CBAM is consistent with the purpose requirement of this article. In addition, the application of this article also requires that trade restrictions are "necessary" for protecting the life or health of humans, animals, and plants. According to the WTO Tuna Case (EEC v. US)[10], the expert group has determined that it is not necessary for a country to force another country to adopt the same trade policy as it does. Therefore, requiring exporting countries to use the same carbon emission price as the EU-ETS may become a hinder to invoking this exception. However, according to the *Emissions Gap Report2022* published by United Nations Environment Programme(UNEP) [11], most countries are falling short of meeting their emission reduction commitments, leading to significant uncertainty to achieve net-zero emissions as planned. Furthermore, due to the existing emissions gap, even if countries meet their Nationally Determined Contributions (NDCs) on schedule, it may be extremely challenging to limit the global average temperature rise to 1.5℃ by the end of this century. This report highlights only an urgent system-wide transformation can avoid climate disaster. Hence, some researchers believe that the EU can argue that the implementation of CBAM meet the urgency of protecting human health and thereby it is necessary [6]. However, according to the Thai cigarette case, some scholars believe that meeting the necessary conditions for this exception also requires considering whether there are alternative measures with less trade restrictions [9]. In the fifth section of this article, some improved environmentally friendly trade measures have proposed as a response to CBAM. These measures may also lead the EU failure to invoke this exception.

The Article XX (g) of the GATT require trade restrictions measures are related to the protection of exhaustible natural resources, and such measures can work effectively with domestic production or consumption measures. According to this exception, it is first necessary to prove that the natural resources protected by trade restrictions are exhaustible. According to existing WTO cases, reducing atmospheric carbon emissions by CBAM may be considered a measure to protect clean air or atmospheric resources [6]. However, there are also views that whether atmospheric carbon content can be recognized as exhaustible natural resources still lacks case support from the WTO [10]. Even if the "atmospheric carbon content" can be recognized as an exhaustible natural resource, there is still doubt whether the exhaustible resources can exist in non-jurisdictional areas [11]. After all, if only resources within the jurisdiction of the European Union are allowed to be protected, there may be little impact on global carbon reduction, especially when exporting countries may take more effective measures to reduce emissions. However, as there is no provision on the necessity of measures like Article XX (b), some scholars believe that the probability of CBAM successfully invoking this

[8] See https://www.ipcc.ch/2022/02/28/pr-wgii-ar6/.
[9] See https://apps.who.int/iris/bitstream/handle/10665/345329/9789240034228-eng.pdf?sequence=1&isAllowed=y.
[10] See https://www.wto.org/english/tratop_e/dispu_e/gatt_e/92tuna.pdf.
[11] See https://wedocs.unep.org/bitstream/handle/20.500.11822/40874/EGR2022.pdf?sequence=1&isAllowed=y.

DOI: 10.54254/2753-7048/27/20231228

exception may be higher [9]. What's more, on the compatibility between trade restrictions and domestic measures, the CBAM does have a close relationship with EU-ETS. However, the European Union had attempted to use CBAM as a fiscal revenue to help Europe achieve economic recovery previously and put the CBAM income distribution plan on hold now. This may raise doubts about its goal of collaborating with domestic policies to protect natural resources.

Furthermore, even if CBAM meets the Article XX, it is still necessary to abide by the preamble of this article during the implementation process. The preamble of the general exception clause requires CBAM to implement in a reasonable and non-discriminatory way. There is a viewpoint that the EU can avoid being identified as discriminatory by consulting with countries [6]. However, the opposing views argue that the purpose of CBAM is to enhance the competitiveness of industries within the EU so that it does not conform to the preamble to this article [12]. What's more, although the EU endeavors to consider different conditions for applying CBAM in different countries, it may still be difficult to achieve objectivity and reasonable in specific mechanism design [13].

After analyzing the relationship between CBAM and WTO rules, this section demonstrate the compatibility between EU CBAM and WTO rules is still highly controversial in the academic community. This article suggests that this may be due to outdated WTO rules that have not been updated in a timely manner. Although the Ministerial Conference included the optimal use of world resources for sustainable development as one of the objectives of the WTO in the Uruguay Round negotiations, the outdated WTO rules may be still hard to serve as a legal basis for determine environmental related trade rules nowadays. Furthermore, after the current suspension of the appellate body, the WTO also lost an efficient way to solve this dilemma. As a result, this may deprive a traditional way for countries opposing CBAM to seek trade remedy under the WTO framework. Therefore, the response measures of these countries may tend to lean towards negotiating with the EU for CBAM improvements to suit their national circumstances better or proposing alternative measures that align more closely with existing multilateral trade rules as a basis for challenging the legitimacy of CBAM.

## 5. Response to the Implementation of CBAM

Although there are still legal disputes and design shortcomings in the implementation of CBAM, one reasonable purpose cannot be ignored is to solve the problem of carbon leakage. Its emergence aims to solve the contradiction between some developed countries that implement strict environmental standards and developing countries with relatively loose environmental protection measures. Although its development is not yet perfect enough, lacking consultation and practical testing, CBAM may indeed expose the issue of incompatibility between current carbon reduction targets and international trade rules. This may become the normative reason for trade conflicts between developed and developing countries due to differences in carbon reduction measures. However, from another perspective, this may also provide a good opportunity for consultation and problem-solving. The emergence of CBAM may prompt some countries to establish and improve carbon pricing mechanisms. In addition, it is likely to attract international attention to and innovation in environmentally friendly trade rules. Just as the failure of the implementation of the carbon aviation tax prompted the formation of a multilateral carbon emission market mechanism under the International Civil Aviation Organization, the introduction of the CBAM also spurs improvements and innovation in addressing carbon leakage in international trade.

For example, in the carbon tariff mechanism established by American scholars, consideration is given to the costs associated with climate change such as national energy taxes, subsidies, and other costs rather than only use carbon emission price. This may help to avoid using a single carbon price standard to measure mitigation efforts in other countries [14]. However, some scholars argue that the carbon border mechanism lacking full consultation with other countries may not accord to the

DOI: 10.54254/2753-7048/27/20231228

principle of CBDR and therefore suggest that full exemptions for underdeveloped countries and favorable treatment for developing countries should be included in the carbon tariff mechanism [15]. Moreover, some scholars are trying to devise more efficient and compatible measures to replace CBAM. For instance, some scholars argue that in the absence of a functioning WTO appellate body, signing free trade agreements may be more suitable for addressing climate change and environmental protection issues in international trade [12]. Furthermore, some scholars propose replacing the CBAM by directly imposing domestic energy taxes. This approach involves controlling the ratio of extraction taxes that elevate energy prices and production taxes that lower energy prices to prevent carbon leakage [9].

These responses may be where the value of CBAM lies. In an era where achieving carbon neutrality becomes an international consensus and climate issues garner increasing attention, establishing environmentally friendly trade rules is a trend in the development of WTO rules. The emergence of CBAM has facilitated discussions and innovations about this and may provide solutions and pathways for updating WTO rules. Therefore, the implementation of the CBAM poses both challenges and opportunities for the WTO. With the dysfunction of the appellate body, the WTO has lost its ability to resolve trade disputes. If the WTO cannot effectively address the global trade disputes caused by CBAM, its influence is likely to be further weakened. However, if the WTO can serve as a negotiation platform and enhance the alignment between existing international carbon reduction targets and trade rules, it could provide an opportunity to update the current WTO rules. This, in turn, may help resolve the crisis facing the WTO.

## 6. Conclusion

In the international context of carbon neutrality consensus, the establishment of CBAM aims to propose environmentally friendly trade rules to address climate change, which poses challenges and opportunities for WTO rules. The analysis in this article indicates that the intentions behind the CBAM have two purposes including preventing further weakening of industries competitiveness in EU and addressing carbon leakage to help achieve carbon reduction targets. From the perspective of mechanism design, the CBAM uses the EU-ETS carbon price as the tariff benchmark. This may make it conflict with existing WTO rules. However, due to the suspension of the WTO appellate body, it is difficult for opposing countries to seek remedies by traditional way in WTO. Furthermore, in recent years, the growing concern for environmental protection indicates trade rules that can balance environmental protection objectives may represent a trend in the improving of international trade rules. Therefore, CBAM as an initial attempt may help raising global awareness of carbon leakage and paying more attention to develop environmentally friendly trade rules. This could potentially promote the improvement or innovation of such rules in responses to CBAM.

As a summary, this article suggests that the implementation of CBAM may provide an opportunity for the WTO to update its existing rules and advance its reform. As the most influential multilateral trade organization globally, the WTO can provide a platform for negotiation and cooperation to safeguard the rights of each member country. This platform may be able to facilitate the building of a carbon border adjustment mechanism that better balance the interests of countries. For example, countries with expertise in low-carbon technologies may reach reasonable agreements with developing countries on the introduction of advanced carbon emission technologies during this process. This cooperation in carbon reduction may be strengthened to avoid carbon leakage and the emergence of unilateral green barriers.

However, updating WTO rules may take a considerable amount of time due to the design of its voting mechanism. As a result, countries with similar carbon reduction capabilities and goal may resolving trade disputes related to the environment using regional trade rules or bilateral agreements. Due to space limitations, this article did not study the environmental protection provisions in these

DOI: 10.54254/2753-7048/27/20231228

regional trade rules and bilateral agreements. Furthermore, as CBAM is gradually implemented, attention may be given to the subtle differences in its implementation among different countries in the future.

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